

# Service Manual

Colour Video Camera  
**AW-E560E**

*Simplified*

Please file and use this manual together with the service manuals for the Model No. WV-E550E, order No. AVS9404832C8.

## SPECIFICATIONS

<b>Pickup element :</b>	1/2" interline, supersensitive CCD
<b>Pixels :</b>	752 (H) x 582 (V) pixels
<b>Scanning :</b>	2:1 interlace
<b>System :</b>	PAL
<b>Scanning frequency :</b>	15.625 kHz (horizontal), 50 Hz (vertical)
<b>Lens mount :</b>	1/2" standard bayonet mount
<b>Synchronizing :</b>	Internal or external
<b>External sync input :</b>	VBS, BB, VS or HD/VD
<b>Sensitivity :</b>	2000 lux, F9.5, 3200 °K
<b>Minimum illumination :</b>	5 lx, at F1.4, +18 dB
<b>Signal-to-noise ratio :</b>	60 dB (typical)
<b>Horizontal resolution :</b>	800 TV lines (high band, DTL ON)
<b>Registration :</b>	0.05%
<b>Contour correction :</b>	Horizontal and vertical (2 Line Type)
<b>White balance :</b>	AWC (2 memories), MANU, ATW
<b>Black balance :</b>	AUTO, Manual
<b>Colour bar :</b>	full colour bar (Setup 0)
<b>Encoder :</b>	Y, U, V
<b>Shutter speed :</b>	1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000, MANU (1/15000 to 1/62)
<b>Gain :</b>	0 dB, 9 dB, 18 dB, AGC
<b>Gamma correction :</b>	ON/OFF switchable
<b>Storage mode :</b>	Field/frame switchable
<b>Iris :</b>	AUTO, ELC
<b>Video output :</b>	Composite: 1 Vp-p (75 Ω) x 1 (BNC connector) (VIDEO/RGB connector) R/B/G: 0.7 Vp-p (75 Ω) x 1 (VIDEO/RGB connector) Y: 1 Vp-p (75 Ω) x 1 (VIDEO/RGB connector) C: 0.3Vp-p chroma level(75 Ω) x 1 (VIDEO/RGB connector) PR: 0.7 Vp-p (75 Ω) x 1 (VIDEO/RGB connector) PB: 0.7 Vp-p (75 Ω) x 1 (VIDEO/RGB connector) Sync: 4 V/0.3 V (75 Ω) switchable x 1 (VIDEO/RGB connector)

# Panasonic




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## **WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public.

It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.

Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

 <b>CAUTION</b> RISK OF ELECTRIC SHOCK DO NOT OPEN		This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.
<b>CAUTION:</b> TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.		This symbol alerts the user that important literature concerning the operation and maintenance of this has been included. Therefore, it should be read carefully in order to avoid any problems.

### IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are indicated by the "△" mark on the schematic diagram and the replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-radiation, shock, fire, or other hazards. Do not modify the original design without permission of manufacture.

Source voltage :	12 V DC
Power consumption :	12.0 W
Operating temperature :	−10°C to +45°C (14°F to +113°F)
Storage temperature :	−20°C to +60°C (4°F to +140°F)
Dimensions :	81 (W) x 86 (H) x 169 (D) mm [3-3/16" (W) x 3-3/8" (H) x 6-5/8" (D)]
Weight :	1.2 kg (2.64 lbs.)

## STANDARD ACCESSORIES

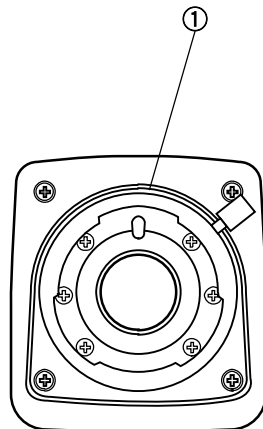
Body cap .....	1
4 pin connector for EXT DC IN .....	1

## OPTIONAL ACCESSORIES

Multiplex Adaptor WV-PS550		Conversion Cable (for AG-B640 or AU-B110)	
Remote Control Unit (RCU)	WV-RC550A	WV-CA4C4P	
Remote Control Unit (RCU)	WV-RC700A	Connection Cable (Dsub-BNC)	
Remote Control Box (RCB)	WV-CB700A	WV-CA9T5 (9-pin - BNC, approx. 5m/16.5ft)	
RCU Rack Mount Frame	WV-Q70	Studio Cable (for WV-RC700A)	
Lens Extension Cable		WV-CA26U15 (26-pin - 26-pin, approx. 15m/49.5ft)	
WV-CA12T12 (12-pin - 12-pin, approx. 15 cm/6")		WV-CA26U30 (26-pin - 26-pin, approx. 30m/99ft)	
Conversion Cable (for WV-CB700A)		WV-CA26U100 (26-pin - 26-pin, approx. 100m/330ft)	
WV-CA20T10 (20-pin - 10-pin, approx. 1m/3.3ft)		Joint Connector WV-CA26T26 (26-pin - 26-pin))	
Conversion Cable (for WV-RC700A)		RCB Cable (for WV-CB700A)	
WV-CA26T20 (26-pin - 20-pin, approx. 3m/9.9ft)		WV-CA10B25 (10-pin - 10-pin, approx. 25m/82.5ft)	
Connection Cable (Dsub-Dsub)		WV-CA10B50 (10-pin - 10-pin, approx. 50m/165ft)	
WV-CA9T9 (9-pin - 9-pin, approx. 5m/16.5ft)		Mounting Bracket	WV-831

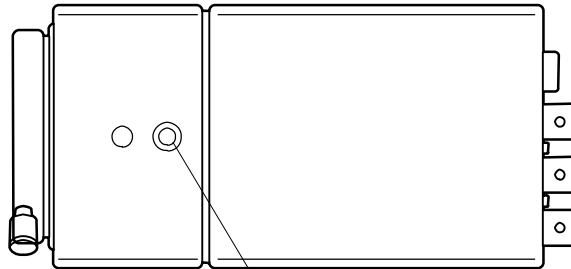


# MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS

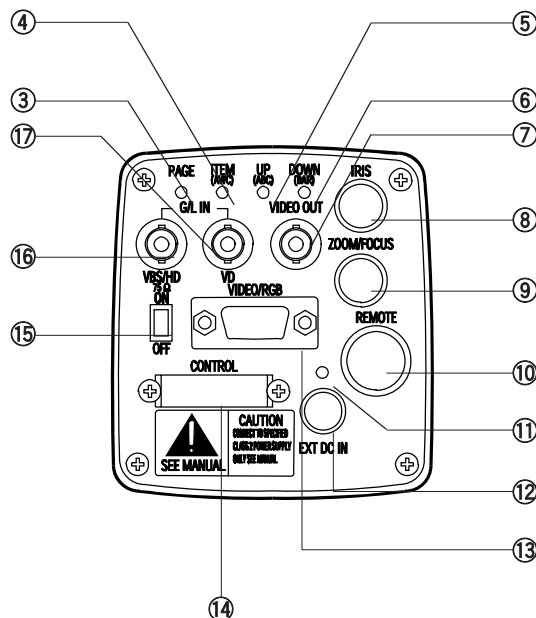
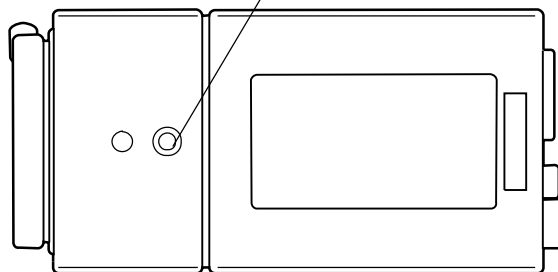


<Front View>

<Top View>



<Bottom View>



## 1. Lens Mount

1/2" standard bayonet type lens or a microscope adaptor can be mounted.

## 2. Mounting Hole

A screw hole (1/4" - 20 UNC) for mounting the camera on a wall, ceiling with a mounting bracket or tripod.

## 3. Page Switch (PAGE)

A menu will appear on the monitor screen when this switch is pressed for around 2 seconds. Pressing the switch advances the menu page.

## 4. Item Switch (ITEM/AWC)

Any of the items shown in the menu can be selected with this switch. When the menu is not displayed or the camera is in shooting mode, the automatic white balance control can be set with this switch.

## 5. Up Switch (UP/ABC)

While the menu is displayed, any setting can be brought up to a higher value with this switch. When the menu is not displayed or the camera is in shooting mode, the automatic black balance control can be set with this switch.

## 6. Down Switch (DOWN/BAR)

While the menu is displayed any setting can be brought down to a lower value with this switch. When the menu is not displayed or the camera is in shooting mode, the colour bar and the shooting conditions are alternately indicated by pressing the switch.



**13. Video/RGB Output Connector (VIDEO/RGB)**

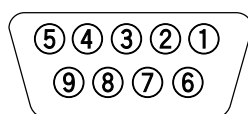
Composite/Y signal, RGB/Y-C/component signal and synchronizing signal are output from this connector.

\* Refer to Page 40 for signal selection.

The optional cable WV-CA9T5 or WV-CA9T9 must be used for connection to this connector.

Pin No.	Signal	Pin No.	Signal
1	GND	6	SY/COMP
2	GND	7	SYNC
3	R/PR/C	8	GND
4	G/Y/Y	9	C/NC
5	B/PB/NC		

Video/RGB Output Connector (VIDEO/RGB)



<Front View>

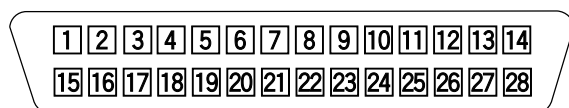
**14. Control Connector (CONTROL)**

Control signals for a pan/tilt unit come to this connector when a pan/tilt unit controller is connected to the camera through the Remote Control Unit WV-RC700A with a multicable.

The multiplex adaptor WV-PS550 is connected to this connector when using a coaxial multiplex system. The WV-RC700A and WV-PS550 can be connected with a coaxial cable.

Pin No.	Signal	Pin No.	Signal
1	Composite Video Output	15	Defroster Control Output
2	GND	16	Wiper Control Output
3	Not Used	17	Common
4	Not Used	18	+5.2 V Output
5	G/L Input	19	GND
6	GND	20	-5.2 V Output
7	WV-PS550 Detect	21	GND
8	PS Transmission	22	GND
9	PS Reception	23	DC 12 V Input
10	GND	24	DC 12 V Input
11	UP Control Output	25	Not Used
12	Down Control Output	26	+9.2 V Output
13	Left Control Output	27	GND
14	Right Control Output	28	GND

Control Connector (CONTROL)



<Front View>

**15. G/L Signal 75-ohm ON/OFF Switch (75Ω ON/OFF)**

A terminating switch for G/L signals at G/L VBS/HD input connector and G/L VD input connector.

**16. G/L VBS/HD Input Connector (G/L IN - VBS/HD)**

Signals synchronized with the reference signal are to be supplied to this connector when the camera is to be synchronized with the reference signal. VBS/BB, VS and HD signals are to be automatically determined.

**17. G/L VD Input Connector (G/L IN - VD)**

Same as Item (16) except that VD signal is to be supplied when input signal at Item (16) is HD.

# ADJUSTMENT PROCEDURE

Refer to the Adjustment Procedure for WV-E550 except described below.

## (3) Drive PLL Adjustment

Test point: TP7 (DRIVE VCO)

Drive Board

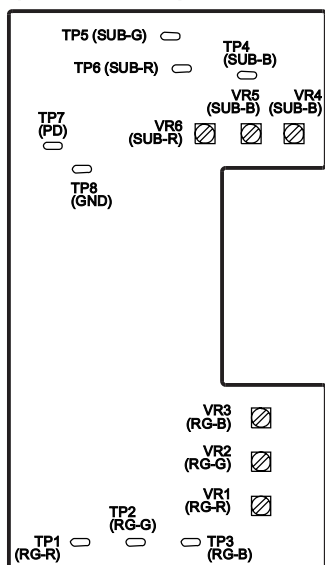
Adjust: L1 (28MHz VCO)

Drive Board

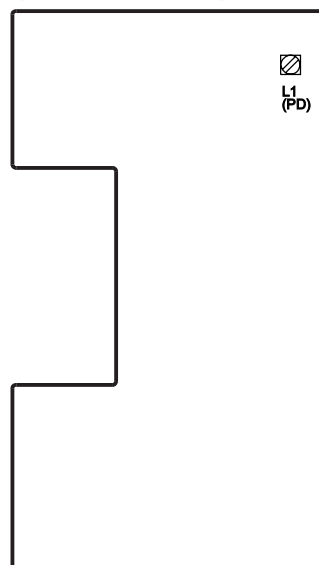
- Connect the Digital Voltmeter to TP7.
- Adjust L1 to obtain  $2.3 \pm 0.2$  V DC.

# LOCATION OF TEST POINTS AND ADJUSTING CONTROLS

DRIVE BOARD  
(PATTERN SIDE)



DRIVE BOARD  
(COMPONENT SIDE)





# COMPARISON PARTS LIST

## ■ MISCELLANEOUS

	WV-E550E	AW-E560E	
REF. NO.	PART NO.	PART NO.	DESCRIPTION
MISCELLANEOUS			
M3	YWV0EA0307AN	YW0E1A015A	Optical Head Assy
M5	YWV5KA1329A1	YW4A1A004A	Upper Case
M11	YWV7QA3240A4	YW7B1A122A	Main Label

## ■ DRIVE BOARD

	WV-E550E	AW-E560E	
REF. NO.	PART NO.	PART NO.	DESCRIPTION
DRIVE BOARD			
PCB1 (RTL)	YVWKB550E1A	YVWKB550E1A	Printed Circuit Board Assy
D9	_____	MA165K	Diode
R25	_____	ERJ3GEY0R00	Carbon 150K ohms 1/16W
R26	ERJ3GEY0R00	_____	Carbon 5.6K ohms 1/16W
R164	ERJ3GEYJ103	ERJ3GEYJ562	Carbon 5.6K ohms 1/16W
R168	_____	ERJ3GEY0R00	Carbon 0 ohm 1/16W
C2,4	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 μF 25V
C13-15	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 μF 25V
C16-18	ECEV1CV100	YWRVS1C100M	Electrolytic 10 μF16V
C19-21	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 μF 25V
C23-25	ECEV1EV100	YWRVS1E100M	Electrolytic 10 μF 25V
C44	YW5X102K5VB	GRM9B102K5H	Ceramic 1000 pF
C47	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 μF 25V
C48	YW5CH330J5VB	GRM9CH330J5H	Ceramic 33 pF
C49	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 μF 25V
C54,55	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 μF 25V
C59	_____	YW5CH100J5VB	Ceramic 10 pF
C60	YW5X102K5VB	GRM9B102K5H	Ceramic 1000 pF
L2	YWNL32T150	_____	_____
TP9,10	_____	YWRCT2125TPV	Test Point

## ■ DIGITAL PROCESS BOARD

	WV-E550E	AW-E560E	
REF. NO.	PART NO.	PART NO.	DESCRIPTION
DIGITAL PROCESS BOARD			
PCB2 (RTL)	YWVKCE550E1A	YWVKCE550E1A	Printed Circuit Board Assy
C1	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C2	ECEV0JV220	YWRVS0J220M	Electrolytic 22 $\mu$ F 6.3V
C5	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C6	ECEV0JV220	YWRVS0J220M	Electrolytic 22 $\mu$ F 6.3V
C10,11	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C15,17	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C19	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C21-32	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C34,35	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C37	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C39-45	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C47-50	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C61-63	YW5CH330J5VB	GRM9CH330J5H	Ceramic 33 pF
C201,204	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C205,207	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C301,304	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C305,307	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C401,404	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C405,407	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C501,504	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C505,507	YYW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C509	YW5CH330J5VB	GRM9CH330J5H	Ceramic 33 pF
C600	_____	YGM1C121J1HT	Ceramic 120 pF



## ■ SYSTEM CONTROL BOARD

	WV-E550E	AW-E560E	
REF. NO.	PART NO.	PART NO.	DESCRIPTION
SYSTEM CONTROL BOARD			
PCB3 (RTL)	YWVKCE550P2A	YWVKCE550P2B	Printed Circuit Board Assy
IC3	YWM27C512F52	YWM27C512F58	IC
IC4	43256AGU10L	43256BGU85L	IC
R140	ERJ3GEYJ472	ERJ3GEYJ102	Carbon 4.7K ohms 1/16W
C1,3	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C8,9	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C11-14	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C18	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C24-29	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C31-33	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C39,41	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C43-46	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C48	YW5X102K5VB	GRM9B102K5H	Ceramic 1000 pF
C49,51	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C52,60	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C65,67	ECEV0JV220	YWRVS0J220M	Electrolytic 22 $\mu$ F 6.3V
C70	ECEV0JV220	YWRVS0J220M	Electrolytic 22 $\mu$ F 6.3V

## ■ PREAMP / ENCODER BOARD

	WV-E550E	AW-E560E	
REF. NO.	PART NO.	PART NO.	DESCRIPTION
PREAMP / ENCODER BOARD			
PCB4 (RTL)	YWVKBE550E3A	YWVKBE550E3A	Printed Circuit Board Assy
R107,112	ERJ3GEYJ152	ERJ3GEYJ182	Carbon 1.8K ohms 1/16W
VR12,13	EVM7JGA30B13	EVM7JGA00B23	Variable Resistor 2K ohms
C1	ECEV0JV330	YWRVS0J330M	Electrolytic 33 $\mu$ F 6.3V
C2	ECEV1CV470	EEVHB1C470P	Electrolytic 47 $\mu$ F 16V
C4	ECEV0JV330	YWRVS0J330M	Electrolytic 33 $\mu$ F 6.3V
C5	ECEV0JV470S	YWRVS0J470M	Electrolytic 47 $\mu$ F 6.3V
C8	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C9	ECEV1CV100	YWRVS1C100M	Electrolytic 10 $\mu$ F 16V
C14	ECEV1CV100	EEVHB1C100R	Electrolytic 10 $\mu$ F 16V
C15	ECEV1CV100	YWRVS1C100M	Electrolytic 10 $\mu$ F 16V
C20	ECEV1CV100	YWRVS0J220M	Electrolytic 22 $\mu$ F 6.3V
C24	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C25	ECEV0JV330	EEVHB0J330R	Electrolytic 33 $\mu$ F 6.3V
C27	YW5CH020D5VB	YW5CH030D5V	Ceramic 3 pF
C28,29	ECEV1CV100	YWRVS1C100M	Electrolytic 10 $\mu$ F 16V
C30	ECEV1CV100	EEVHB1C100R	Electrolytic 10 $\mu$ F 16V
C41,42	ECEV1CV100	YWRVS1C100M	Electrolytic 10 $\mu$ F 16V
C45,46	ECEV1HV010	YWRVS1H1R0M	Electrolytic 1 $\mu$ F 50V
C47,48	ECEV1CV100	EEVHB1C100R	Electrolytic 10 $\mu$ F 16V
C49-51	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C52,53	ECEV1CV470	YWRVS1C470M	Electrolytic 47 $\mu$ F 16V
C55	ECEV1HV010	YWRVS1H1R0M	Electrolytic 1 $\mu$ F 50V
C56	ECEV0JV330	YWRVS0J330M	Electrolytic 33 $\mu$ F 6.3V
C62	ECEV1CN100	YWRVP1C100M	Electrolytic 10 $\mu$ F 16V
C64	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C65	ECEV1CV100	YWRVS1C100M	Electrolytic 10 $\mu$ F 16V
C66	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C67	ECEV1CV100	YWRVS1C100M	Electrolytic 10 $\mu$ F 16V
C68	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C71	ECEV1CV100	EEVHB1C100R	Electrolytic 10 $\mu$ F 16V
C88-90	ECEV1HV010	YWRVS1H1R0M	Electrolytic 1 $\mu$ F 50V
C91,92	ECEV1CV470	YWRVS1C470M	Electrolytic 47 $\mu$ F 16V
C93	ECEV1CV100	YWRVS1C100M	Electrolytic 10 $\mu$ F 16V
C94	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C95	ECEV1CV100	EEVHB1C100R	Electrolytic 10 $\mu$ F 16V

	WV-E550E	AW-E560E		
REF. NO.	PART NO.	PART NO.	DESCRIPTION	
PREAMP / ENCODER BOARD				
C96	ECEV0JV330	EEVHB0J330R	Electrolytic	33 μF 6.3V
C97	YW5F104Z2VB	YGM1F104Z1ET	Ceramic	0.1 μF 25V
C98,99	ECEV0JV330	EEVHB0J330R	Electrolytic	33 μF 6.3V
C100	YW5F104Z2VB	YGM1F104Z1ET	Ceramic	0.1 μF 25V
C101	ECEV0JV330	EEVHB0J330R	Electrolytic	33 μF 6.3V
C102	YW5F104Z2VB	YGM1F104Z1ET	Ceramic	0.1 μF 25V
C103	ECEV0JV330	EEVHB0J330R	Electrolytic	33 μF 6.3V
C104	YW5F104Z2VB	YGM1F104Z1ET	Ceramic	0.1 μF 25V
C105	ECEV1CV100	EEVHB1C100R	Electrolytic	10 μF 16V
C106	ECEV1CV100	YWRVS1C100M	Electrolytic	10 μF 16V
C116,118	ECEV1CV100	YWRVS1C100M	Electrolytic	10 μF 16V
C119,120	ECEV1CV100	YWRVS1C100M	Electrolytic	10 μF 16V
C122	ECEV1CV100	EEVHB1C100R	Electrolytic	10 μF 16V
C123-125	YW5F104Z2VB	YGM1F104Z1ET	Ceramic	0.1 μF 25V
C128,129	ECEV1CV470	YWRVS1C470M	Electrolytic	47 μF16V
C401,403	ECEV1CV100	YWRVS1C100M	Electrolytic	10 μF 16V
C405	ECEV1CV100	YWRVS1C100M	Electrolytic	10 μF 16V
C501,503	YW5CH180J5VB	GRM9CH180J5H	Ceramic	18 pF
C504	YW5F104Z2VB	YGM1F104Z1ET	Ceramic	0.1 μF 25V
C505,508	ECEV1CV100	YWRVS1C100M	Electrolytic	10 μF 16V
C509	YW5F104Z2VB	YGM1F104Z1ET	Ceramic	0.1 μF 25V
C511	ECEV1CV470	YWRVS1C470M	Electrolytic	47 μF16V
C514	ECEV1CV100	YWRVS1C100M	Electrolytic	10 μF 16V
C515,516	YW5F104Z2VB	YGM1F104Z1ET	Ceramic	0.1 μF 25V
C601,603	YW5CH180J5VB	GRM9CH180J5H	Ceramic	18 pF
C604	YW5F104Z2VB	YGM1F104Z1ET	Ceramic	0.1 μF 25V
C605,608	ECEV1CV100	YWRVS1C100M	Electrolytic	10 μF 16V
C609	YW5F104Z2VB	YGM1F104Z1ET	Ceramic	0.1 μF 25V
C611	ECEV1CV470	YWRVS1C470M	Electrolytic	47 μF 16V
C614	ECEV1CV100	YWRVS1C100M	Electrolytic	10 μF 16V
C615,616	YW5F104Z2VB	YGM1F104Z1ET	Ceramic	0.1 μF 25V
C701,703	YW5CH180J5VB	GRM9CH180J5H	Ceramic	18 pF
C704	YW5F104Z2VB	YGM1F104Z1ET	Ceramic	0.1 μF 25V
C705,708	ECEV1CV100	YWRVS1C100M	Electrolytic	10 μF16V
C709	YW5F104Z2VB	YGM1F104Z1ET	Ceramic	0.1 μF 25V
C711	ECEV1CV470	YWRVS1C470M	Electrolytic	47 μF16V
C714	ECEV1CV100	YWRVS1C100M	Electrolytic	10 μF 16V
C715,716	YW5F104Z2VB	YGM1F104Z1ET	Ceramic	0.1 μF 25V
DL5	_____	ELB4A514	Delay Line	
L1-4	YWNL32T5R6J	_____	_____	
L5	_____	ELB4A514	Delay Line	

## ■ SYNC BOARD

	WV-E550E	AW-E560E	
REF. NO.	PART NO.	PART NO.	DESCRIPTION
SYNC BOARD			
PCB5 (RTL)	YWVKCE550E3A	YWVKCE550E3A	Printed Circuit Board Assy
IC3	MN73093	MN73093LBX	IC
IC13	YWTC4S11F	YWTC4S11FR	IC
IC15	YWTC7W08F	YWTC7W08FL	IC
IC31	YWTC7S04F	YWTC7S04FR	IC
R163	—	ER3GEY0R00	Carbon 0 ohm 1/16W
R179	ERJ3GEYJ332	ER3GEYJ242	Carbon 2.4K ohm 1/16W
VR2	EVM7JGA30B14	EVM7JGA00B14	Variable Resistor 10K ohms
C1,2	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C4,6	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C8,9	YW5CH311J5VB	GRM9CH331J5H	Ceramic 330 pF
C12	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C14	YW5CH311J5VB	GRM9CH331J5H	Ceramic 330 pF
C16,18	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C23	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C31	ECEV1EV4R7	YWRVS1E4R7M	Electrolytic 4.7 $\mu$ F 25V
C32	YW5X102K5VB	GRM9B102K5H	Ceramic 1000 pF
C34	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C37-39	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C40	ECEV0JN100S	YWRVP1A100M	Electrolytic 10 $\mu$ F 10V
C41	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C42	ECEV0JV330	YWRVS0J220M	Electrolytic 22 $\mu$ F 6.3V
C43	ECEV1CV100	EEVHB1C100R	Electrolytic 10 $\mu$ F 16V
C44	ECEV1CV100	YWRVS1C100M	Electrolytic 10 $\mu$ F 16V
C45,47	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C49	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C50	ECEV1CV100	YWRVS1C100M	Electrolytic 10 $\mu$ F 16V
C51	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C52	ECEV1CV100	YWRVS1C100M	Electrolytic 10 $\mu$ F 16V
C53,75	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C76	YW5X102K5VB	GRM9B102K5H	Ceramic 1000 pF
C77-81	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V

## ■ MOTHER BOARD

	WV-E550E	AW-E560E	
REF. NO.	PART NO.	PART NO.	DESCRIPTION
<b>MOTHER BOARD</b>			
PCB9 (RTL)	YWVKBE550P2A	YWVKBE550P2B	Printed Circuit Board Assy
IC8	YWNJM2902N	YWNJM2902VT1	IC
R38-43	ERJ3GEYJ473	ERJ3GEY0R00	Carbon 0 ohm 1/16W
R44	ERJ3GEYJ223	_____	_____
R102	_____	ERJ3GEYJ104	Carbon 100K ohms 1/16W
C1	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C4-6	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C7	ECEV1CV470	YWRVS1C470M	Electrolytic 47 $\mu$ F 16V
C8-10	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V
C11	ECEV1EV330	YWRVS1E330M	Electrolytic 33 $\mu$ F 25V
C12	ECEV1CV470	YWRVS1C470M	Electrolytic 47 $\mu$ F 16V
C16-18	ECEV1EV4R7	EEVHB1H3R3R	Electrolytic 4.7 $\mu$ F 25V
C20	YW5X102K5VB	GRM9B102K5H	Ceramic 1000 pF
C21,22	ECEV1EV330	YWRVS1E330M	Electrolytic 33 $\mu$ F 25V
C24,25	ECEV1EV330	YWRVS1E330M	Electrolytic 33 $\mu$ F 25V
C26,27	ECEV0JV101	YWRVS0J101M	Electrolytic 100 $\mu$ F 6.3V
C28	ECEV0JV220	YWRVS0J220M	Electrolytic 22 $\mu$ F 6.3V
C29	ECEV0JV101	YWRVS0J101M	Electrolytic 100 $\mu$ F 6.3V
C30	ECEV1CV470	YWRVS1C470M	Electrolytic 47 $\mu$ F 16V
C31	ECEV1CV100	YWRVS1C100M	Electrolytic 10 $\mu$ F 16V
C32	ECEV1CV470	YWRVS1C470M	Electrolytic 47 $\mu$ F 16V
C34,43	YW5F104Z2VB	YGM1F104Z1ET	Ceramic 0.1 $\mu$ F 25V

## ■ ACCESSORY PARTS/PACKAGING PARTS

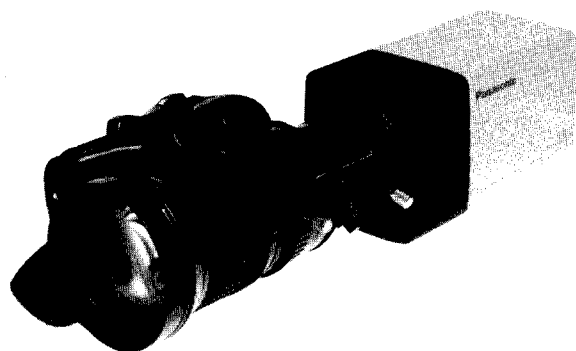
	WV-E550E	AW-E560E	
REF. NO.	PART NO.	PART NO.	DESCRIPTION
<b>ACCESSORY PARTS/PACKAGING PARTS</b>			
M31	YWV8QA3249AN	YW7J1A096A	Operating Instructions
M35	YWV9CF2203AN	YW0C1A013A	Packaging Ass'y



# Service Manual

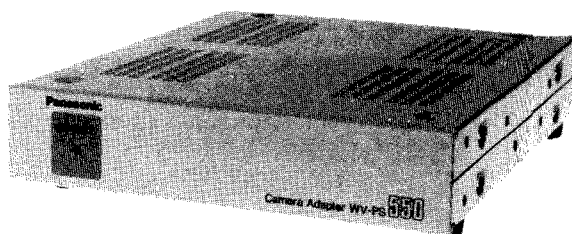
Colour Video Camera  
**WV-E550E**

Camera Adaptor  
**WV-PS550**



(Lens : Purchased locally)

**WV-E550E**



**WV-PS550**

## WV-E550E

### SPECIFICATIONS

Pickup element	1/2" interline, supersensitive CCD
Pixels	752 (H) x 582 (V) pixels
Scanning	2:1 interlace
System	PAL
Scanning frequency	15.625 kHz (horizontal), 50 Hz (vertical)
Lens mount	1/2" standard bayonet mount
Synchronizing	Internal or external
External sync input	VBS, BB, VS or HD/VD
Sensitivity	2000 lux, F8, 3200 °K
Minimum illumination	7 lux, at F1.4, +18 dB
Signal-to-noise ratio	60 dB (typical)
Horizontal resolution	800 TV lines (high band, DTL ON)
Registration	0.05%
Contour correction	Horizontal and vertical (2 Line Type)
White balance	AWC (2 memories), MANU, ATW
Black balance	AUTO, Manual
Colour bar	full colour bar (Setup 0)
Encoder	Y, U, V
Shutter speed	1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000, MANU (1/15000 to 1/62)
Gain	0 dB, 9 dB, 18 dB; AGC
Gamma correction	ON/OFF switchable
Storage mode	Field/frame switchable
Iris	AUTO, ELC
Video output	Composite: 1 Vp-p (75 Ω) x 1 (BNC connector) (VIDEO/RGB connector) R/B/G: 0.7 Vp-p (75 Ω) x 1 (VIDEO/RGB connector) Y: 1 Vp-p (75 Ω) x 1 (VIDEO/RGB connector) C: 0.3Vp-p chroma level(75 Ω) x 1 (VIDEO/RGB connector) PR: 0.7 Vp-p (75 Ω) x 1 (VIDEO/RGB connector) PB: 0.7 Vp-p (75 Ω) x 1 (VIDEO/RGB connector) Sync: 4 V/0.3 V (75 Ω) switchable x 1 (VIDEO/RGB connector)

# Panasonic



Source voltage	12 V DC
Power consumption	12.0 W
Operating temperature	−10°C to +45°C (14°F to +113°F)
Storage temperature	−20°C to +60°C (4°F to +140°F)
Dimensions	81 (W) x 86 (H) x 169 (D) mm [3-3/16" (W) x 3-3/8" (H) x 6-5/8" (D)]
Weight	1.2 kg (2.64 lbs.)

Weight and dimensions indicated are approximate.  
Specifications are subject to change without notice.

## STANDARD ACCESSORIES

Body cap .....	1
4 pin connector for EXT DC IN .....	1

## OPTIONAL ACCESSORIES

Multiplex Adaptor WV-PS550	Connection Cable (Dsub-BNC)
Remote Control Unit (RCU) WV-RC700A	WV-CA9T5 (9-pin - BNC, approx. 5m/16.5ft)
Remote Control Box (RCB) WV-CB700A	Studio Cable (for WV-RC700A)
RCU Rack Mount Frame WV-Q70	WV-CA26U15 (26-pin - 26-pin, approx. 15m/49.5ft)
Lens Extension Cable	WV-CA26U30 (26-pin - 26-pin, approx. 30m/99ft)
WV-CA12T12 (12-pin - 12-pin, approx. 15 cm/6")	WV-CA26U100 (26-pin - 26-pin, approx. 100m/330ft)
Conversion Cable (for WV-CB700A)	Joint Connector WV-CA26T26 (26-pin - 26-pin)
WV-CA20T10 (20-pin - 10-pin, approx. 1m/3.3ft)	RCB Cable (for WV-CB700A)
Conversion Cable (for WV-RC700A)	WV-CA10B25 (10-pin - 10-pin, approx. 25m/82.5ft)
WV-CA26T20 (26-pin - 20-pin, approx. 3m/9.9ft)	WV-CA10B50 (10-pin - 10-pin, approx. 50m/165ft)
Connection Cable (Dsub-Dsub)	Mounting Bracket WV-831
WV-CA9T9 (9-pin - 9-pin, approx. 5m/16.5ft)	

## WV-PS550

## SPECIFICATIONS

Power:	Input voltage 85 - 110V DC (supplied by the RCU WV-RC700A)
Input and Output:	
MPX Input and Output:	Frequency multiplex signal (N type connector x 1)
Data Input:	RS-232C, 2400 bps (4-pin connector x 1)
	The Camera Adaptor WV-PS550, Camera WV-E550 and Remote Control Unit can not be controlled by RS-232C directly.
Audio Input:	−20 dB audio signal
Par/Tilt and Housing Control Output:	Right, left, up and down, defroster and wiper
	Open collector output (low active)
	Sink current 20 mA max.
	Withstand voltage 30V max. (28-pin connector x 1 each)
Switch Function:	Audio in/Data in Select Switch
Dimensions:	206.5 (W) x 44 (H) x 250 (D) mm (8-1/8" (W) x 1-11/16" (H) x 9-1/2" (D))
Weight:	2.4 kg (5.28lbs.)

Weight and dimensions indicated are approximate.  
Specifications are subject to change without notice.

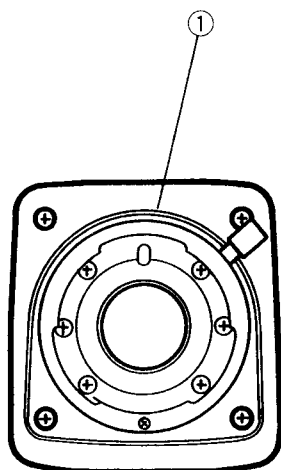
## STANDARD ACCESSORIES

Camera Cable (36-pin/28-pin) .....	1pc
4-pin Connector for DATA IN .....	1pc
N type Connector for MPX .....	1pc

There are special components used in this equipment which are important for safety. These parts are indicated by the "▲" mark on the schematic diagram and the replacement parts list. It is essential that these critical parts should be replaced with manufacture's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacture.

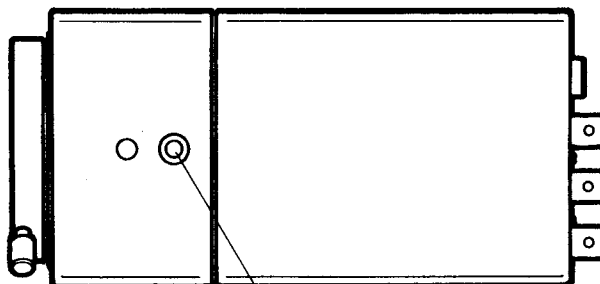
## WV-PS550 ..... 133

# MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS (WV-E550E)

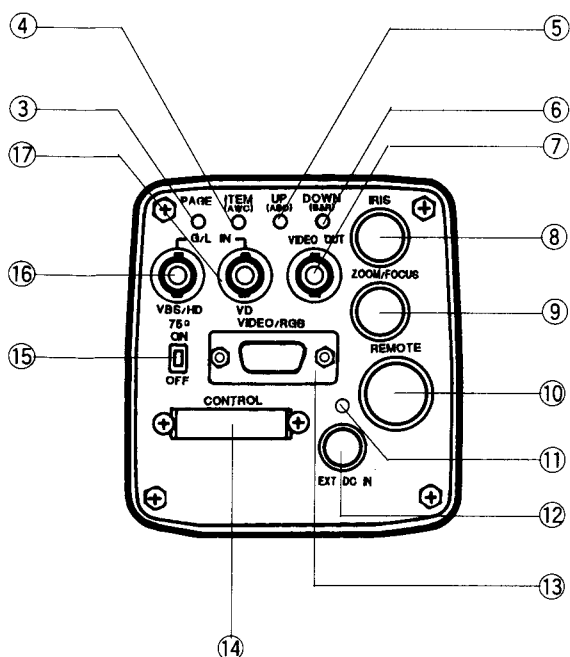
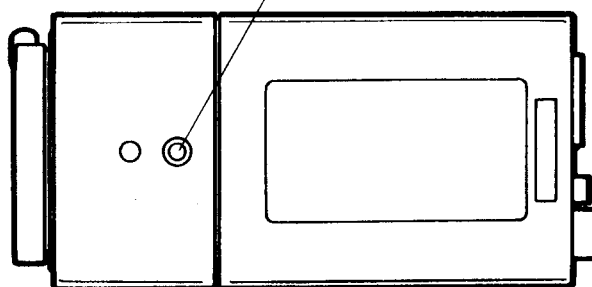


<Front View>

<Top View>



<Bottom View>



## 1. Lens Mount

1/2" standard bayonet type lens or a microscope adaptor can be mounted.

## 2. Mounting Hole

A screw hole (1/4" - 20 UNC) for mounting the camera on a wall, ceiling with a mounting bracket or tripod.

## 3. Page Switch (PAGE)

A menu will appear on the monitor screen when this switch is pressed for around 2 seconds. Pressing the switch advances the menu page.

## 4. Item Switch (ITEM/ABC)

Any of the items shown in the menu can be selected with this switch. When the menu is not displayed or the camera is in shooting mode, the automatic white balance control can be set with this switch.

## 5. Up Switch (UP/ABC)

While the menu is displayed, any setting can be brought up to a higher value with this switch. When the menu is not displayed or the camera is in shooting mode, the automatic black balance control can be set with this switch.

## 6. Down Switch (DOWN/BAR)

While the menu is displayed any setting can be brought down to a lower value with this switch. When the menu is not displayed or the camera is in shooting mode, the colour bar and the shooting conditions are alternately indicated by pressing the switch.

### 7. Video Output Connector (VIDEO OUT)

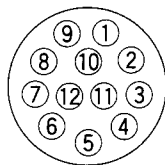
A composite video signal is provided at this connector.

### 8. Iris Connector (IRIS)

Input terminal for lens with an iris control function. Some lenses may require an optional lens extension cable for connection.

Pin No.	Signal	Pin No.	Signal
1	Not Used	7	Iris F
2	Not Used	8	Auto/Remote Control
3	GND	9	Not Used
4	Auto/Manual Control	10	Not Used
5	Iris Control	11	Not Used
6	Lens P	12	Not Used

Iris Connector (IRIS)



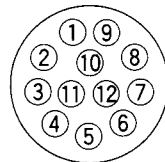
<Front View>

### 9. Zoom/Focus Connector (ZOOM/FOCUS)

Input terminal for lens with zoom and focus function that can be remote controlled.

Pin No.	Signal	Pin No.	Signal
1	Not Used	7	Voltage Common
2	Not Used	8	Focus Control
3	GND	9	Zoom Control
4	Not Used	10	Not Used
5	Not Used	11	Lens +V
6	+12 V	12	Lens -V

Zoom/Focus Connector (ZOOM/FOCUS)



<Front View>

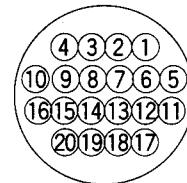
### 10. Remote Connector (REMOTE)

Input terminal dedicated to control signals from the optional Remote Control Box (WV-CB700A) and the Remote Control Unit (WV-RC700A).

- \* WV-CB700A is connected through the optional conversion cable (WV-CA20T10).
- \* WV-RC700A is connected through the optional conversion cable (WV-CA26T20).

Pin No.	Signal	Pin No.	Signal
1	Composite Video Output	11	RCB Transmission
2	GND	12	Control (Command)
3	G/Y/Y Output	13	+9.2 V RCB
4	R/PR/C Output	14	DC 12 V Output
5	GND	15	DC 12 V Input
6	RCB Detect	16	DC 12 V Input
7	EXT SUB In	17	RCB Reception
8	B/PB Output	18	GND
9	GND	19	GND
10	G/L Input	20	Not used

Remote Connector (REMOTE)



<Front View>

### 11. Power Indicator

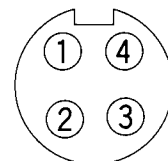
Red LED lamp lights to indicate that the specified DC power is supplied to the camera.

### 12. DC Input Connector (EXT DC IN)

12 V DC is supplied through the 4-pin connector provided with the camera.

Pin No.	Signal
1	+12 V In
2	+12 V In
3	Ground
4	Ground

DC Input Connector (EXT DC IN)



<Front View>

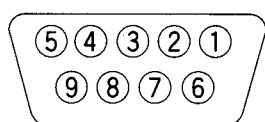
### 13. Video/RGB Output Connector (VIDEO/RGB)

Composite/Y signal, RGB/Y-C/component signal and synchronizing signal are output from this connector.

The optional cable WV-CA9T5 or WV-CA9T9 must be used for connection to this connector.

Pin No.	Signal	Pin No.	Signal
1	GND	6	SY/COMP
2	GND	7	SYNC
3	R/PR/C	8	GND
4	G/Y/Y	9	C/NC
5	B/PB/NC		

Video/RGB Output Connector (VIDEO/RGB)



<Front View>

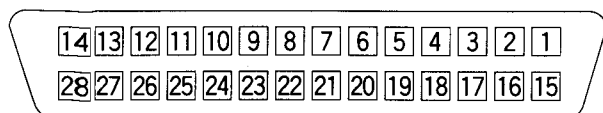
### 14. Control Connector (CONTROL)

Control signals for a pan/tilt unit come to this connector when a pan/tilt unit controller is connected to the camera through the Remote Control Unit WV-RC700A with a multicable.

The multiplex adaptor WV-PS550 is connected to this connector when using a coaxial multiplex system. The WV-RC700A and WV-PS550 can be connected with a coaxial cable.

Pin No.	Signal	Pin No.	Signal
1	Composite Video Output	15	Defroster Control Output
2	GND	16	Wiper Control Output
3	Not Used	17	Common
4	Not Used	18	+5.2 V Output
5	G/L Input	19	GND
6	GND	20	-5.2 V Output
7	WV-PS550 Detect	21	GND
8	PS Transmission	22	GND
9	PS Reception	23	DC 12 V Input
10	GND	24	DC 12 V Input
11	UP Control Output	25	Not Used
12	Down Control Output	26	+9.2 V Output
13	Left Control Output	27	GND
14	Right Control Output	28	GND

Control Connector (CONTROL)



<Front View>

### 15. G/L Signal 75-ohm ON/OFF Switch (75Ω ON/OFF)

A terminating switch for G/L signals at G/L VBS/HD input connector and G/L VD input connector.

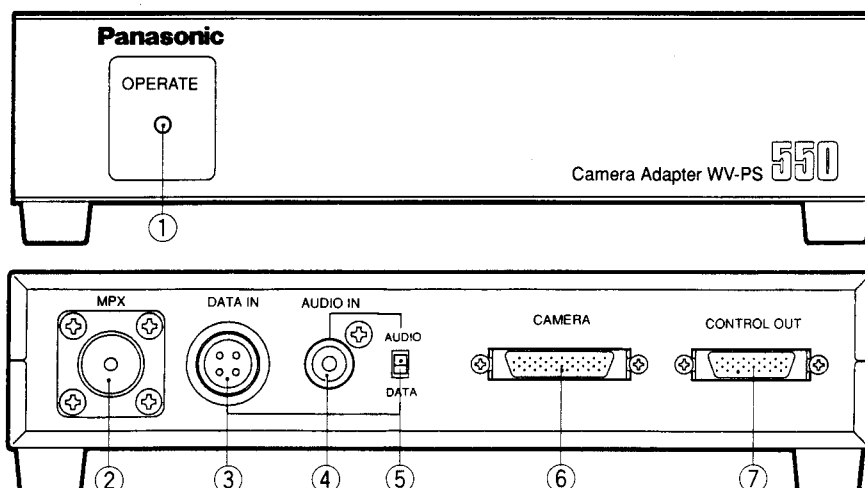
### 16. G/L VBS/HD Input Connector (G/L IN - VBS/HD)

Signals synchronized with the reference signal are to be supplied to this connector when the camera is to be synchronized with the reference signal. VBS/BB, VS and HD signals are to be automatically determined.

### 17. G/L VD Input Connector (G/L IN - VD)

Same as Item (16) except that VD signal is to be supplied when input signal at Item (16) is HD.

# MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS (WV-PS550)



## (1) Power LED (OPERATE)

When the Remote Control Unit (RCU) WV-RC700A and Camera WV-E550 are properly connected and also when the power from the Remote Control Unit is supplied, this LED lights.

## (2) MPX Input/Output Connector (MPX)

This connector is used to connect the coaxial cable from the MPX connector of the Remote Control Unit (RCU) WV-RC700A.

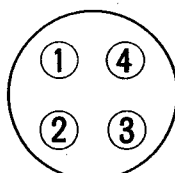
## (3) Data Input Connector (DATA IN, 4-pin)

This connector is used to connect the RS-232C (baud rate 2400 bps) control signal from the pan/tilt and lens controller.

### Caution:

When connecting the controller to this connector, do not connect anything to the Audio Input Jack (4). Also, be sure to switch the Audio In/Data In Select Switch (5) is set to the DATA IN position.

Pin No.	Signal
1	NC
2	GND
3 -	RXD
4	TXD



## (4) Audio Input Jack (AUDIO IN)

This jack is used to supply an audio signal for output to the audio output of the Remote Control Unit (RCU) WV-RC700A.

### Caution:

When supplying an audio signal to the remote control unit using this jack, nothing should be connected to the Data Input Connector (3) and Audio In/Data In Select Switch (5) should be switched over to the AUDIO position.

Also, be sure to switch the select switch on the MOD PCB board of the Remote Control Unit (RCU) WV-RC700A to the AUDIO position.

## (5) Audio In/Data In Select Switch (AUDIO IN/DATA IN)

This switch is used to select the Data Input Connector (3) and the Audio Input Jack (4).

**AUDIO IN:** Audio signal supplied to WV-RC700A is selected.

**DATA IN:** Data signal supplied from the controller is selected.

## (6) Camera Cable Connector (CAMERA 36-pin)

This connector is used to connect the 36-pin side of the supplied 28-pin/36-pin cable.

(The 28-pin side of the cable should be connected to the Colour Camera WV-E550.)

## (7) Control Output Connector (CONTROL OUT, 28-pin)

This connector is used to connect the cable for controlling the pan/tilt unit.

Pin No.	Signal
11	UP
12	DOWN
13	LEFT
14	RIGHT
15	DEF
16	WIPE
17	COM (0V)
19, 27, 28	GND
Others	NC

### \* Control signal Interface

Control system: ON/OFF

Polarity: Low active

Output: Open collector

(transistor withstand voltage: 30V max.)

Sink current: 20 mA max.

### \* Caution:

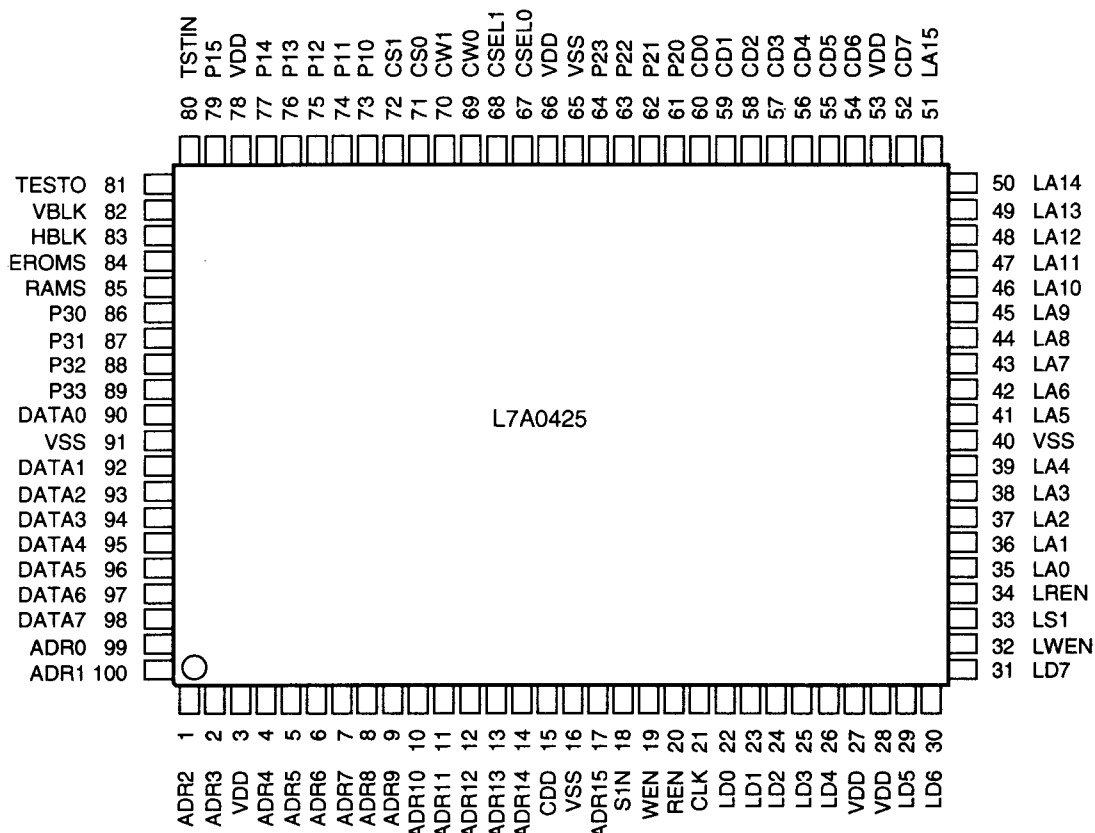
When driving the pan/tilt head, relay, etc. directly, care should be taken to prevent the power from going up beyond the withstand voltage of the adaptor output circuit and the sink current (20 mA max.).

## CIRCUIT DESCRIPTION

### IC Description (WV-E550E)

- IC1 on the System Control Board is using the Microprocessor I/O Expander Gate Array Logic IC YWL7A0425.

Description of this IC is as follows:



(TOP VIEW)

Pin	Name	I/O	Description
1	ADR2	I	Address input terminals from Microprocessor. (16-Bit)
2	ADR3	I	
3	VDD	–	Power supply terminal.
4	ADR4	I	Address input terminals from Microprocessor. (16-Bit)
5	ADR5	I	
6	ADR6	I	
7	ADR7	I	
8	ADR8	I	
9	ADR9	I	
10	ADR10	I	
11	ADR11	I	
12	ADR12	I	
13	ADR13	I	
14	ADR14	I	

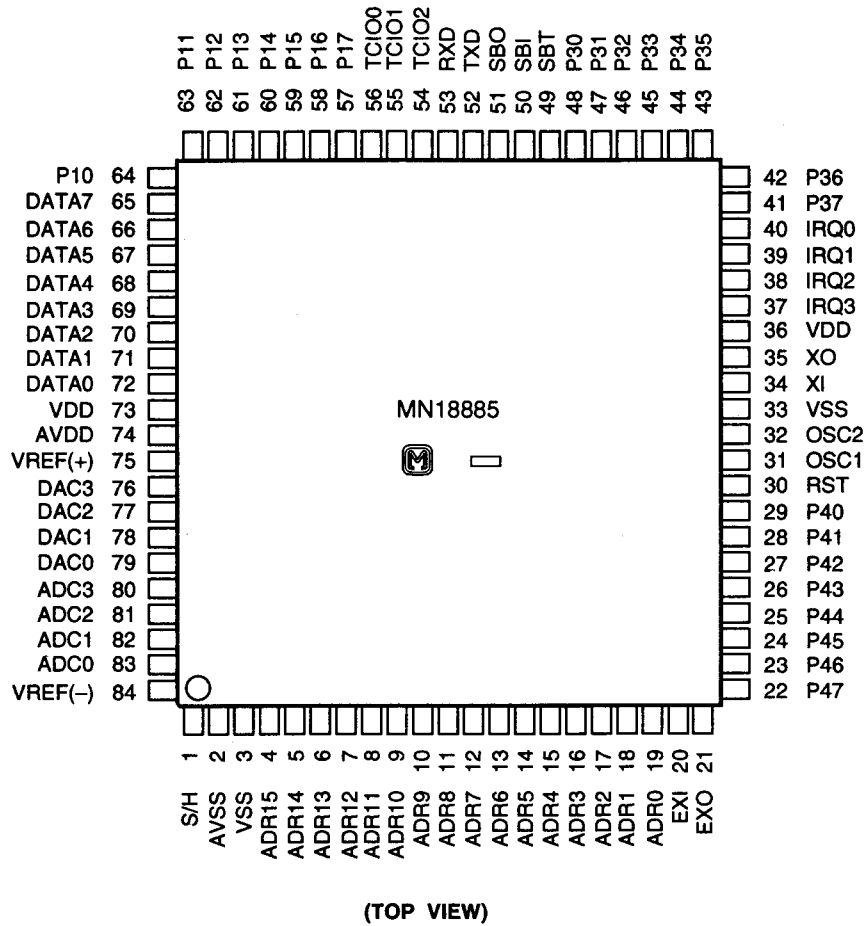
Pin	Name	I/O	Description
15	VDD	–	Power supply terminal.
16	VSS	–	Ground terminal.
17	ADR15	I	Address (MSB) input terminal from Microprocessor.
18	S1N	I	S1N signal input terminal
19	WEN	I	Write enable signal input terminal.
20	REN	I	Read enable signal input terminal.
21	CLK	I	Clock pulse input terminal.
22	LD0	I/O	(LSB) Data input/output terminals between Digital Board.
23	LD1	I/O	
24	LD2	I/O	
25	LD3	I/O	
26	LD4	I/O	
27	VDD	–	Power supply terminal.



Pin	Name	I/O	Description
28	VDD	–	Power supply terminal.
29	LD5	I/O	Data input/output terminals between Digital Board.
30	LD6	I/O	
31	LD7	I/O	
32	LWEN	I	Write enable signal input terminal.
33	LS1	I	LS1 signal input terminal.
34	LREN	I	Read enable signal input terminal.
35	LA0	O	Address output terminals for Digital Board. (16-Bit)
36	LA1	O	
37	LA2	O	
38	LA3	O	
39	LA4	O	
40	VSS	–	Ground terminal.
41	LA5	O	Address output terminals for Digital Board. (16-Bit)
42	LA6	O	
43	LA7	O	
44	LA8	O	
45	LA9	O	
46	LA10	O	
47	LA11	O	
48	LA12	O	
49	LA13	O	
50	LA14	O	
51	LA15	O	(MSB)
52	CD7	O	DOWN SW signal output terminal.
53	VDD	–	Power supply terminal.
54	CD6	O	UP SW signal output terminal.
55	CD5	O	LEFT SW signal output terminal.
56	CD4	O	RIGHT SW signal output terminal.
57	CD3	O	FAR SW signal output terminal.
58	CD2	O	NEAR SW signal output terminal.
59	CD1	O	WIDE SW signal output terminal.
60	CD0	O	TELE SW signal output terminal.
61	P20	I	P20 signal input terminal.
62	P21	I	Clock Data input terminal.
63	P22	–	Test point terminal.
64	P23	–	Test point terminal.
65	VSS	–	Ground terminal.
66	VDD	–	Power supply terminal.

Pin	Name	I/O	Description
67	CSEL0	O	Chip Select 0 signal output terminal.
68	CSEL1	O	Chip Select 1 signal output terminal.
69	CW0	I	CW0 signal input terminal.
70	CW1	I	CW1 signal input terminal.
71	CS0	I	CS0 signal input terminal.
72	CS1	I	CS1 signal input terminal.
73	P10	O	SC CRS2 signal output terminal.
74	P11	O	SC CRS2 signal output terminal.
75	P12	O	DEF SW signal output terminal.
76	P13	O	WIPE SW signal output terminal.
77	P14	O	P14 signal output terminal.
78	VDD	–	Power supply terminal.
79	P15	O	P15 signal output terminal.
80	TSTIN	I	Test signal input terminal.
81	TESTO	O	Test signal output terminal.
82	VBLK	I	VBLK signal input terminal.
83	HBLK	I	HBLK signal input terminal.
84	EROMS	O	EROMS signal output terminal.
85	RAMS	O	RAMS signal output terminal.
86	P30	O	OE signal output terminal.
87	P31	O	CCLK Pulse output terminal.
88	P32	O	P32 signal output terminal.
89	P33	O	P33 signal output terminal.
90	DATA0	I/O	DATA (LSB) input/output terminal between Microprocessor. (8-Bit)
91	VSS	–	Ground terminal.
92	DATA1	I/O	DATA input/out terminals between Microprocessor. (8-Bit)
93	DATA2	I/O	
94	DATA3	I/O	
95	DATA4	I/O	
96	DATA5	I/O	
97	DATA6	I/O	
98	DATA7	I/O	(MSB)
99	ADR0	I	(LSB) Address input terminals from Microprocessor. (16-Bit)
100	ADR1	I	

2. IC2 on the System Control Board is using the Microprocessor IC MN18885.  
Description of this IC is as follows:



Pin	Name	I/O	Description
1	S/H	I/O	S/H signal input/output terminal.
2	AVSS	—	Ground terminal.
3	VSS	—	Ground terminal.
4	ADR15	O	Address output terminals for Microprocessor I/O Expander IC. (16-Bit)
5	ADR14	O	
6	ADR13	O	
7	ADR12	O	
8	ADR11	O	
9	ADR10	O	
10	ADR9	O	
11	ADR8	O	
12	ADR7	O	

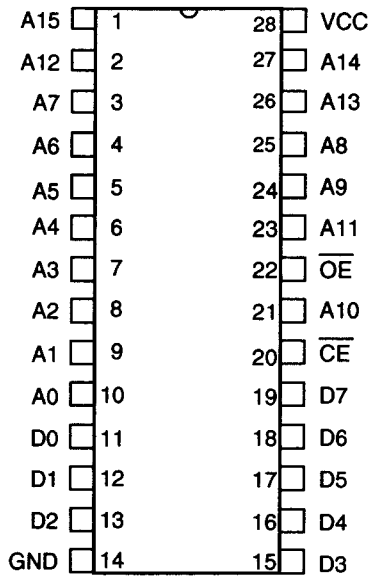
Pin	Name	I/O	Description
13	ADR6	O	Address output terminals for Microprocessor I/O Expander IC. (16-Bit)
14	ADR5	O	
15	ADR4	O	
16	ADR3	O	
17	ADR2	O	
18	ADR1	O	
19	ADR0	O	(LSB)
20	EXI	I	EXI signal input terminal.
21	EXO	O	EXO signal output terminal.
22	P47	O	Read enable signal output terminal.
23	P46	O	Write enable signal output terminal.

Pin	Name	I/O	Description
24	P45	O	P45 signal output terminal.
25	P44	O	P44 signal output terminal.
26	P43	O	P43 signal output terminal.
27	P42	O	P42 signal output terminal.
28	P41	O	S1N signal output terminal.
29	P40	O	S0N signal output terminal.
30	RST	I	Reset signal input terminal.
31	OSC1	I	Oscillator input terminal.
32	OSC2	O	Oscillator output terminal.
33	VSS	–	Ground terminal.
34	XI	I	XI signal input terminal.
35	XO	O	XO signal output terminal.
36	VDD	–	Power supply terminal.
37	IRQ3	I	IRQ3 signal input terminal.
38	IRQ2	I	Power off signal input terminal.
39	IRQ1	I	VD signal input terminal.
40	IRQ0	I	LMW signal input terminal.
41	P37	O	STB signal output terminal.
42	P36	O	LD signal output terminal.
43	P35	O	SEL3 signal output terminal.
44	P34	O	SEL2 signal output terminal.
45	P33	O	SEL1 signal output terminal.
46	P32	O	P32 signal output terminal.
47	P31	O	SYNCSW signal output terminal.
48	P30	O	SHUTTA signal output terminal.
49	SBT	O	SBT signal output terminal.
50	SBI	I	SBI signal input terminal.
51	SBO	O	YOUT3 signal output terminal.
52	TXD	O	TXD signal output terminal.
53	RXD	I	RXD signal input terminal.
54	TCIO2	I	BUSY signal input terminal.
55	TCIO1	I	Data Input Switch terminal.
56	TCIO0	I	WHD signal input terminal.
57	P17	O	VDRST signal output terminal.
58	P16	O	FLD/FRM signal output terminal.
59	P15	O	GAMMA SW signal output terminal.
60	P14	O	IRIS-R/A signal output terminal.
61	P13	O	P13 signal output terminal.
62	P12	O	P12 signal output terminal.
63	P11	O	P11 signal output terminal.

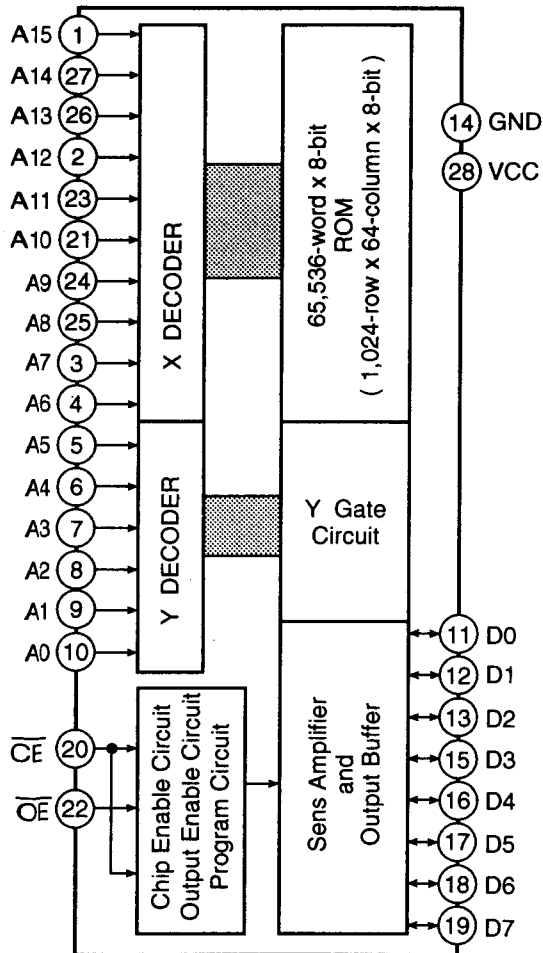
Pin	Name	I/O	Description
64	P10	O	AWCCNT signal output terminal.
65	DATA7	I/O	Data input/output terminals between Microprocessor I/O Expander IC. (8-Bit)
66	DATA6	I/O	
67	DATA5	I/O	
68	DATA4	I/O	
69	DATA3	I/O	
70	DATA2	I/O	
71	DATA1	I/O	
72	DATA0	I/O	
73	VDD	–	Power supply terminal.
74	AVDD	–	Power supply terminal.
75	VREF(+)	I	Reference Voltage (+) input terminal.
76	DAC3	O	D/A Converter 3 output terminal.
77	DAC2	O	D/A Converter 2 output terminal.
78	DAC1	O	D/A Converter 1 output terminal.
79	DAC0	O	D/A Converter 0 output terminal.
80	ADC3	I	A/D Converter 3 input terminal.
81	ADC2	I	A/D Converter 2 input terminal.
82	ADC1	I	A/D Converter 1 input terminal.
83	ADC0	I	A/D Converter 0 input terminal.
84	VREF(–)	I	Reference Voltage (–) input terminal.

3. IC3 on the System Control Board is using the One-time Programmable ROM IC YWM27C512F51.

Description of this IC is as follows:



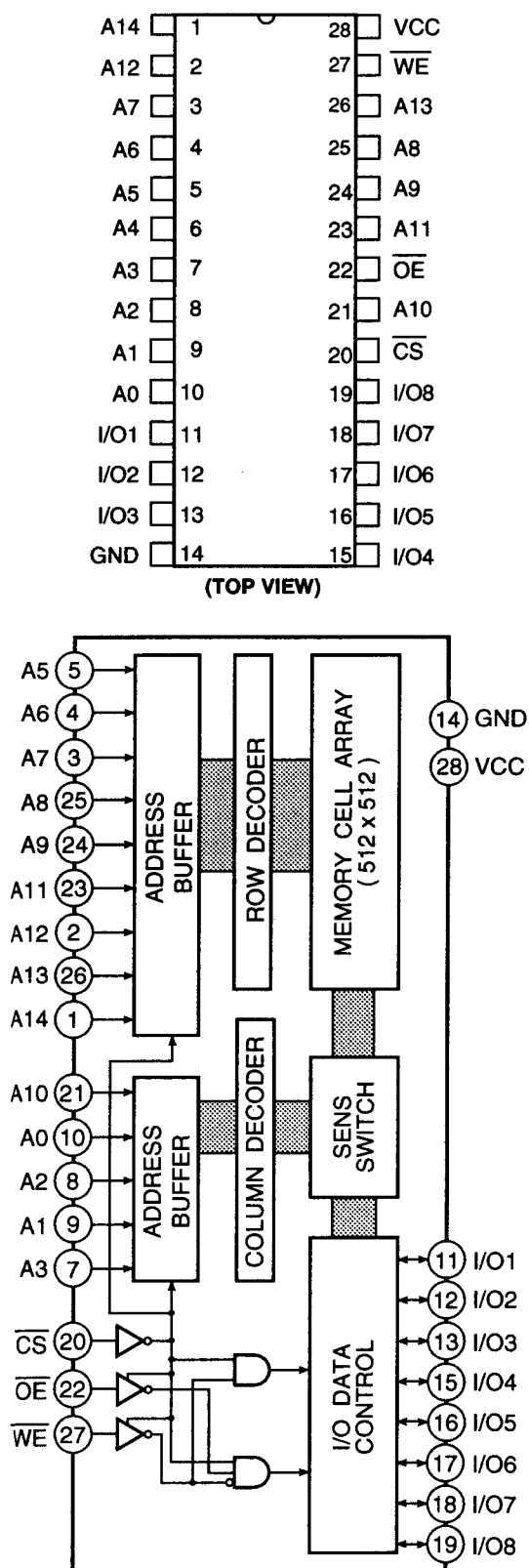
(TOP VIEW)



Pin	Name	I/O	Description
1	A15	I	Address input terminals. (16-Bit)
2	A12	I	
3	A7	I	
4	A6	I	
5	A5	I	
6	A4	I	
7	A3	I	
8	A2	I	
9	A1	I	
10	A0	I	(LSB)
11	D0	I/O	Data input/output terminals. (8-Bit)
12	D1	I/O	
13	D1	I/O	
14	GND	-	Ground terminal.
15	D1	I/O	Data input/output terminals. (8-Bit)
16	D1	I/O	
17	D1	I/O	
18	D1	I/O	
19	D1	I/O	(MSB)
20	$\overline{CE}$	I	Chip enable signal input terminal.
21	A10	I	Address input terminals. (16-Bit)
22	$\overline{OE}$	I	Output enable signal input terminal.
23	A11	I	Address input terminals. (16-Bit)
24	A9	I	
25	A8	I	
26	A13	I	
27	A14	I	
28	VCC	-	Power supply terminal.

## 4. IC4 on the System Control Board is using the Static RAM IC YW43256AGU10L.

Description of this IC is as follows:



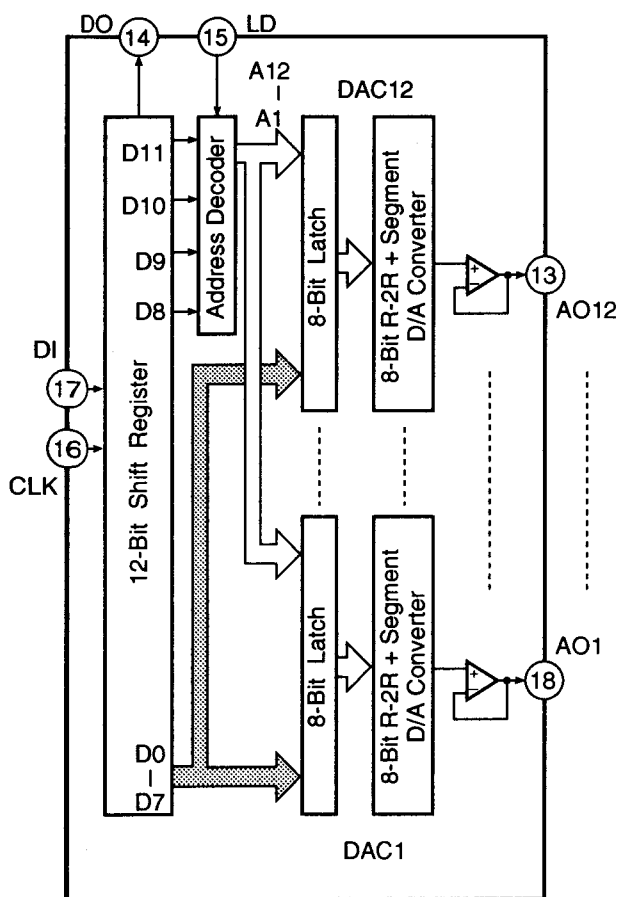
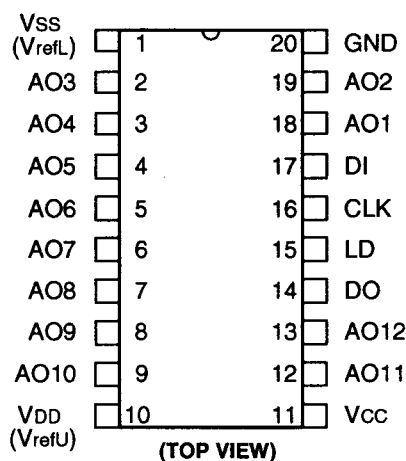
Pin	Name	I/O	Description
1	A14	I	(MSB)  Address input terminals. (15-Bit)
2	A12	I	
3	A7	I	
4	A6	I	
5	A5	I	
6	A4	I	
7	A3	I	
8	A2	I	
9	A1	I	
10	A0	I	(LSB)
11	I/O1	I/O	(LSB)  Data input/output terminals. (8-Bit)
12	I/O2	I/O	
13	I/O3	I/O	
14	GND	-	Ground terminal.
15	I/O4	I/O	Data input/output terminals. (8-Bit)
16	I/O5	I/O	
17	I/O6	I/O	
18	I/O7	I/O	
19	I/O8	I/O	(MSB)
20	$\overline{CS}$	I	Chip Select signal input terminal.
21	A10	I	Address input terminals. (15-Bit)
22	$\overline{OE}$	I	Output enable signal input terminal.
23	A11	I	Address input terminals. (15-Bit)
24	A9	I	
25	A8	I	
26	A13	I	
27	$\overline{WE}$	I	Write enable signal input terminal.
28	VCC	-	Power supply terminal.

$\overline{CS}$	$\overline{OE}$	$\overline{WE}$	MODE	FUNCTION
H	*	*	No Selection	High Impedance
L	H	H	Output disable	High Impedance
L	L	H	Read	DOUT
L	*	L	Write	DIN

\*: Don't care

5. IC12 on the System Control Board is using the 12-ch D/A Converter IC YWM62352GP.

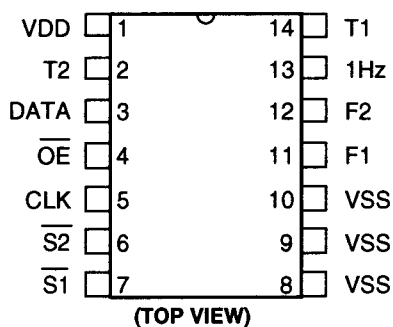
Description of this IC is as follows:



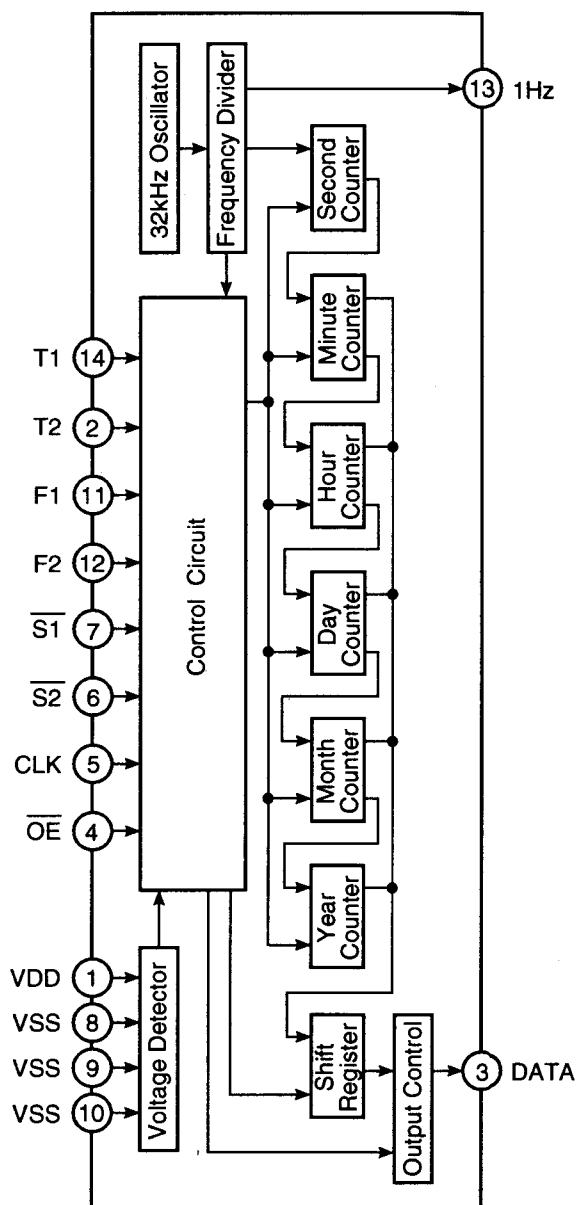
Pin	Name	I/O	Description
1	VSS (VrefL)	–	Lower reference voltage supply terminal for D/A Converter circuit.
2	AO3	O	Analog Data 3 output terminal.
3	AO4	O	Analog Data 4 output terminal.
4	AO5	O	Analog Data 5 output terminal.
5	AO6	O	Analog Data 6 output terminal.
6	AO7	O	Analog Data 7 output terminal.
7	AO8	O	Analog Data 8 output terminal.
8	AO9	O	Analog Data 9 output terminal.
9	AO10	O	Analog Data 10 output terminal.
10	VDD (VrefU)	–	Upper reference voltage supply terminal for D/A Converter circuit.
11	VCC	–	Power supply terminal terminal.
12	AO11	O	Analog Data 11 output terminal.
13	AO12	O	Analog Data 12 output terminal.
14	DO	O	MSB Data output terminal from 12-Bit Shift Register.
15	LD	I	Load signal input terminal. Data of 12-Bit Shift Register should be loaded to Decoder and D/A Output Registers when LD = H.
16	CLK	I	Shift Clock input terminal. Serial Data from DI terminal should be input to Decoder and 12-Bit Shift Register at raising edge of this signal.
17	DI	I	12-Bit Serial Data input terminal.
18	AO1	O	Analog Data 1 output terminal.
19	AO2	O	Analog Data 2 output terminal.
20	GND	–	Ground terminal.

6. IC18 on the System Control Board is using the Real-time Clock IC YWRTC450315B.

Description of this IC is as follows:



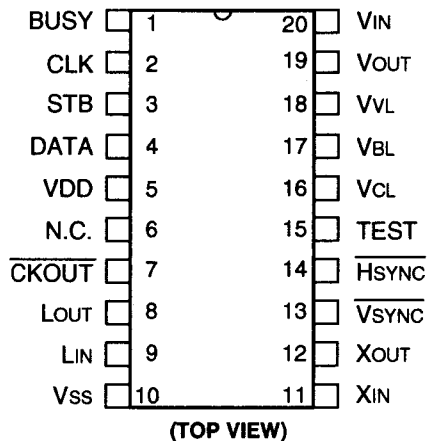
Pin	Name	I/O	Description
1	VDD	–	Power supply terminal. Normally 1.5V.
2	T2	I	Test terminal 2. Normally connect at VSS.
3	DATA	O	Data output terminal. Data should be output when $\overline{OE}$ terminal is at "L".
4	OE	I	Output enable signal input terminal.
5	CLK	I	Clock Pulse input terminal.
6	$\overline{S2}$	I	$\overline{S2}$ signal input terminal. Active at "L".
7	$\overline{S1}$	I	$\overline{S1}$ signal input terminal. Active at "L".
8	VSS	–	Ground terminal.
9	VSS	–	Ground terminal.
10	VSS	–	Ground terminal.
11	F1	I	F1 signal input terminal.
12	F2	I	F2 signal input terminal.
13	1Hz	O	1Hz Pulse output terminal. 50% duty cycle.
14	T1	I	Test terminal 1. Normally connect at VSS.





7. IC17 on the System Control Board is using the On-screen Display IC YWUPD6450601.

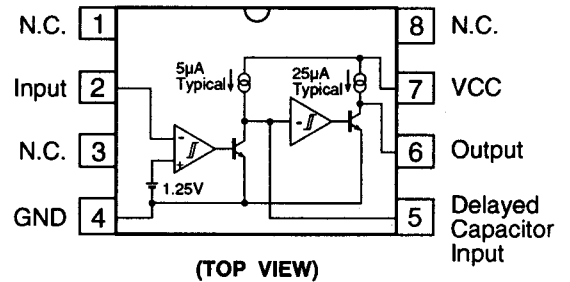
Description of this IC is as follows:



Pin	Name	I/O	Description
1	BUSY	O	Busy signal output terminal.
2	CLK	I	Serial Clock input terminal.
3	STB	I	Strobe signal input terminal.
4	DATA	I	Serial Data input terminal.
5	VDD	-	Power supply terminal.
6	N.C.	-	Non connection.
7	CKOUT	O	Clock Pulse output terminal for Oscillation frequency check.
8	LOUT	O	LC Oscillator output terminal.
9	LIN	I	LC Oscillator input terminal.
10	VSS	-	Ground terminal.
11	XIN	I	Crystal Oscillator input terminal.
12	XOUT	O	Crystal Oscillator output terminal.
13	VSYNC	I	Vertical Sync signal input terminal.
14	HSYNC	I	Horizontal Sync signal input terminal.
15	TEST	-	Test terminal.
16	VCL	I	VCL signal input terminal.
17	VBL	I	VBL signal input terminal.
18	VVL	I	VVL signal input terminal.
19	VOUT	O	Video signal output terminal.
20	VIN	I	Video signal input terminal.

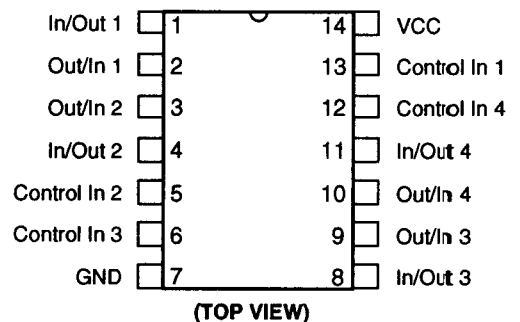
8. IC10 and IC15 on the System Control Board are using the Voltage Detector IC YWM51957AFP.

Description of this IC is as follows:



9. IC18 on the System Control Board, IC3 and IC4 on the Mother Board are using the Quad Analog Switches/Multiplexers/Demultiplexers IC UPD4066 BG.

Description of this IC is as follows:

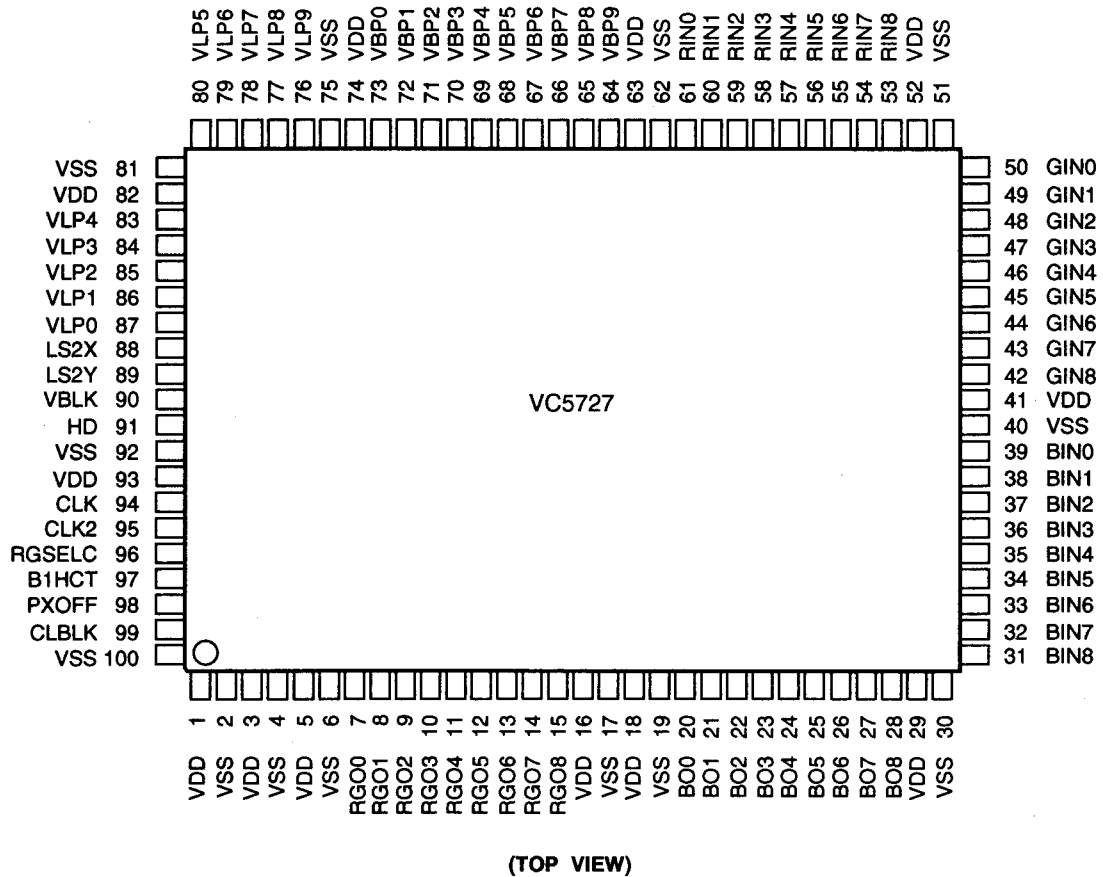


Truth Table

Input	Switch
Control	I/O – O/I
L	OFF
H	ON

# 10. IC2 on the Digital Process Board is using the Gate Array Logic IC YWVC5727.

Description of this IC is as follows:



Pin	Name	I/O	Description
1	VDD	–	Power supply terminal for I/O.
2	VSS	–	Ground terminal for I/O.
3	VDD	–	Power supply terminal for I/O.
4	VSS	–	Ground terminal for I/O.
5	VDD	–	Power supply terminal for I/O.
6	VSS	–	Ground terminal for I/O.
7	RGO0	O	(LSB)  RG23 signal output terminals. (9-Bit)
8	RGO1	O	
9	RGO2	O	
10	RGO3	O	
11	RGO4	O	
12	RGO5	O	
13	RGO6	O	
14	RGO7	O	
15	RGO8	O	(MSB)
16	VDD	–	Power supply terminal for I/O.

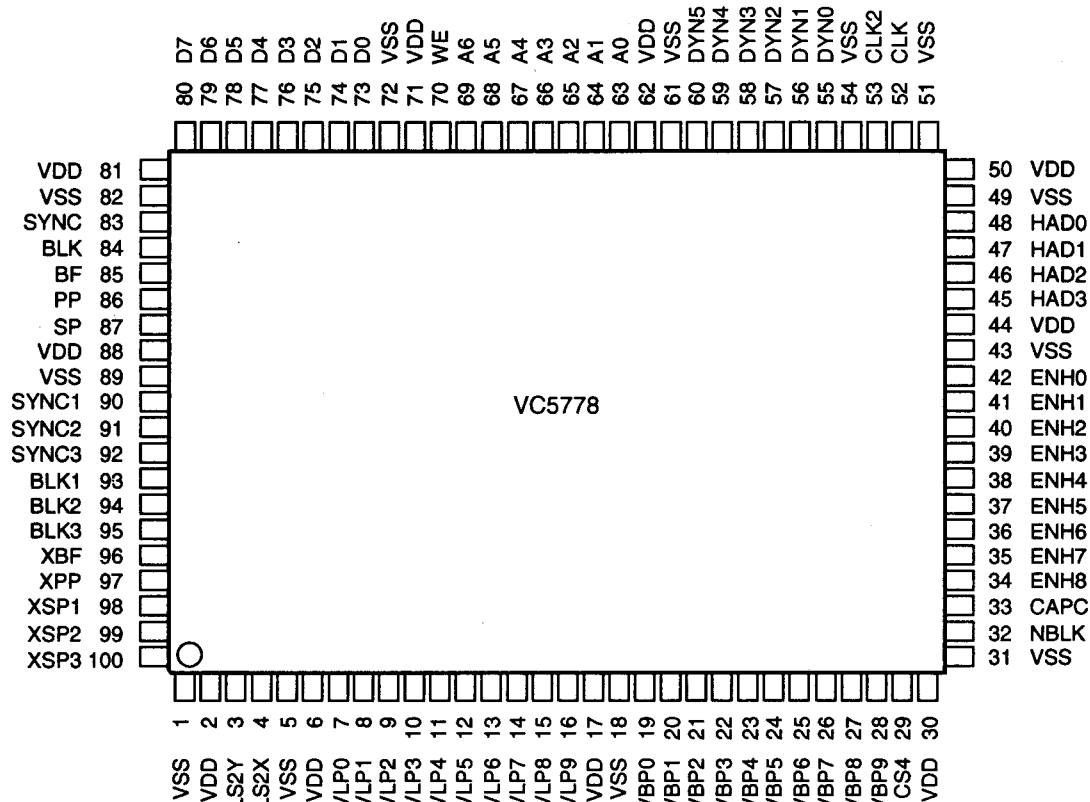
17	VSS	–	Ground terminal for Core.
18	VDD	–	Power supply terminal for Core.
19	VSS	–	Ground terminal for I/O.
20	BO0	O	(LSB)  B23 signal output terminals. (9-Bit)
21	BO1	O	
22	BO2	O	
23	BO3	O	
24	BO4	O	
25	BO5	O	
26	BO6	O	
27	BO7	O	
28	BO8	O	(MSB)
29	VDD	–	Power supply terminal for I/O.
30	VSS	–	Ground terminal for I/O.
31	BIN8	I	(MSB) B12 signal input terminals. (9-Bit)
32	BIN7	I	

Pin	Name	I/O	Description
33	BIN6	I	B12 signal input terminals. (9-Bit)
34	BIN5	I	
35	BIN4	I	
36	BIN3	I	
37	BIN2	I	
38	BIN1	I	
39	BIN0	I	
40	VSS	–	(LSB)
41	VDD	–	Ground terminal for Core.
42	GIN8	I	Power supply terminal for Core.
43	GIN7	I	(MSB)
44	GIN6	I	G12 signal input terminals. (9-Bit)
45	GIN5	I	
46	GIN4	I	
47	GIN3	I	
48	GIN2	I	
49	GIN1	I	
50	GIN0	I	
51	VSS	–	(LSB)
52	VDD	–	Ground terminal for I/O.
53	RIN8	I	Power supply terminal for I/O.
54	RIN7	I	(MSB)
55	RIN6	I	R12 signal input terminals. (9-Bit)
56	RIN5	I	
57	RIN4	I	
58	RIN3	I	
59	RIN2	I	
60	RIN1	I	
61	RIN0	I	
62	VSS	–	(LSB)
63	VDD	–	Ground terminal for I/O.
64	VBP9	O	Power supply terminal for I/O.
65	VBP8	O	(MSB)
66	VBP7	O	VB24 signal output terminals. (10-Bit)
67	VBP6	O	
68	VBP5	O	
69	VBP4	O	
70	VBP3	O	
71	VBP2	O	
72	VBP1	O	
73	VBP0	O	(LSB)
74	VDD	–	Power supply terminal for I/O.

Pin	Name	I/O	Description
75	VSS	–	Ground terminal for I/O.
76	VLP9	O	(MSB)  VL24 signal output terminals. (10-Bit)
77	VLP8	O	
78	VLP7	O	
79	VLP6	O	
80	VLP5	O	
81	VSS	–	Ground terminal for Core.
82	VDD	–	Power supply terminal for Core.
83	VLP4	O	VL24 signal output terminals. (10-Bit)
84	VLP3	O	
85	VLP2	O	
86	VLP1	O	
87	VLP0	O	
			(LSB)
88	LS2X	I	LS2X signal input terminal.
89	LS2Y	I	LS2Y signal input terminal.
90	VBLK	I	VBLK signal input terminal.
91	HD	I	HD signal input terminal.
92	VSS	–	Ground terminal for I/O.
93	VDD	–	Power supply terminal for Core.
94	CLK	I	CLK signal input terminal.
95	CLK2	I	CLK2 signal input terminal.
96	RGSELC	I	RGSELC signal input terminal.
97	B1HCT	I	B1HCT signal input terminal.
98	PXOFF	I	PXOFF signal input terminal.
99	CLBLK	I	CLBLK signal input terminal.
100	VSS	–	Ground terminal for Core.

# 11. IC4 on the Digital Process Board is using the Gate Array Logic IC YWVC5778.

Description of this IC is as follows:



(TOP VIEW)

Pin	Name	I/O	Description
1	VSS	–	Ground terminal for I/O.
2	VDD	–	Power supply terminal for I/O.
3	LS2Y	O	LS2Y signal output terminal.
4	LS2X	O	LS2X signal output terminal.
5	VSS	–	Ground terminal for I/O.
6	VDD	–	Power supply terminal for I/O.
7	VLP0	I	VL24 signal input terminals. (10-Bit)
8	VLP1	I	
9	VLP2	I	
10	VLP3	I	
11	VLP4	I	
12	VLP5	I	
13	VLP6	I	
14	VLP7	I	
15	VLP8	I	
16	VLP9	I	

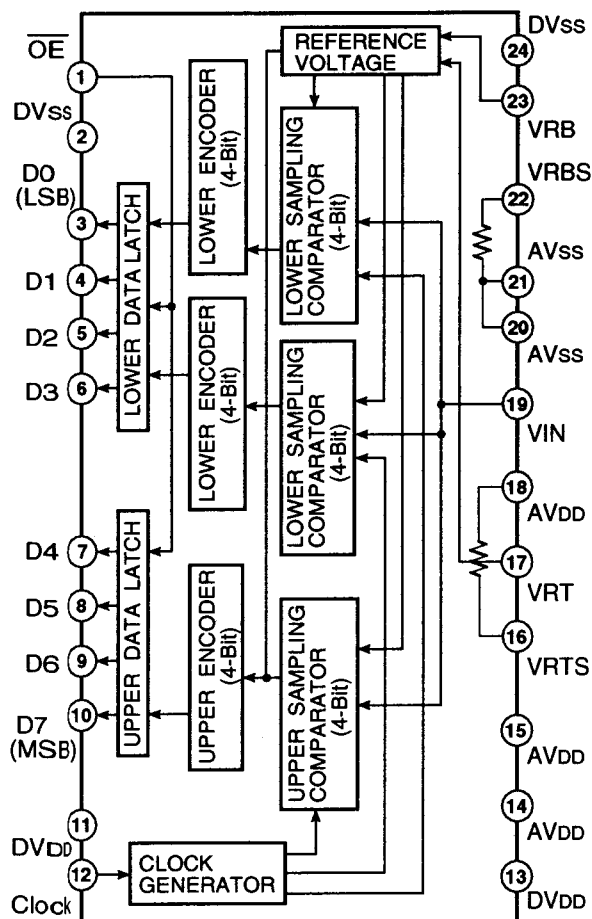
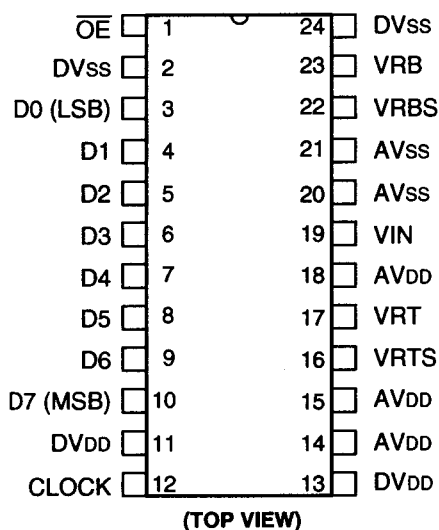
Pin	Name	I/O	Description
17	VDD	–	Power supply terminal for Core.
18	VSS	–	Ground terminal for Core.
19	VBP0	I	VB24 signal input terminals. (10-Bit)
20	VBP1	I	
21	VBP2	I	
22	VBP3	I	
23	VBP4	I	
24	VBP5	I	
25	VBP6	I	
26	VBP7	I	
27	VBP8	I	
28	VBP9	I	
29	CS4	I	CS4 signal input terminal.
30	VDD	–	Power supply terminal for I/O.
31	VSS	–	Ground terminal for I/O.
32	NBLK	O	NBLK signal output terminal.

Pin	Name	I/O	Description
33	CAPC	O	CAPC signal output terminal.
34	ENH8	O	EN43 signal output terminals. (9-Bit)
35	ENH7	O	
36	ENH6	O	
37	ENH5	O	
38	ENH4	O	
39	ENH3	O	
40	ENH2	O	
41	ENH1	O	
42	ENH0	O	
43	VSS	–	Ground terminal for I/O.
44	VDD	–	Power supply terminal for I/O.
45	HAD3	I	HAD3 signal input terminal.
46	HAD2	I	HAD2 signal input terminal.
47	HAD1	I	HAD1 signal input terminal.
48	HAD0	I	HAD0 signal input terminal.
49	VSS	–	Ground terminal for Core.
50	VDD	–	Power supply terminal for Core.
51	VSS	–	Ground terminal for I/O.
52	CLK	I	CLK1 Pulse input terminal.
53	CLK2	I	CLK2 Pulse input terminal.
54	VSS	–	Ground terminal for I/O.
55	DYN0	I	DYN signal input terminals. (6-Bit)
56	DYN1	I	
57	DYN2	I	
58	DYN3	I	
59	DYN4	I	
60	DYN5	I	
61	VSS	–	Ground terminal for Core.
62	VDD	–	Power supply terminal for Core.
63	A0	I	Address signal input terminals. (7-Bit)
64	A1	I	
65	A2	I	
66	A3	I	
67	A4	I	
68	A5	I	
69	A6	I	
70	WE	I	Write enable signal input terminal.
71	VDD	–	Power supply terminal for I/O.
72	VSS	–	Ground terminal for I/O.
73	D0	I	Data input terminals. (8-Bit)
74	D1	I	

Pin	Name	I/O	Description
75	D2	I	Data input terminals. (8-Bit)
76	D3	I	
77	D4	I	
78	D5	I	
79	D6	I	
80	D7	I	
81	VDD	–	Power supply terminal for Core.
82	VSS	–	Ground terminal for Core.
83	SYNC	I	SYNC signal input terminal.
84	BLK	I	BLK signal input terminal.
85	BF	I	BF signal input terminal.
86	PP	I	PP signal input terminal.
87	SP	I	SP signal input terminal.
88	VDD	–	Power supply terminal for I/O.
89	VSS	–	Ground terminal for I/O.
90	SYNC1	O	SYNC1 signal output terminal.
91	SYNC2	O	SYNC2 signal output terminal.
92	SYNC3	O	SYNC3 signal output terminal.
93	BLK1	O	BLK1 signal output terminal.
94	BLK2	O	BLK2 signal output terminal.
95	BLK3	O	BLK3 signal output terminal.
96	XBF	O	XBF signal output terminal.
97	XPP	O	XPP signal output terminal.
98	XSP1	O	XSP1 signal output terminal.
99	XSP2	O	XSP2 signal output terminal.
100	XSP3	O	XSP3 signal output terminal.

**12. IC6 to IC8 on the Digital Process Board are using the 8-Bit A/D Converter IC YWCX1175AM.**

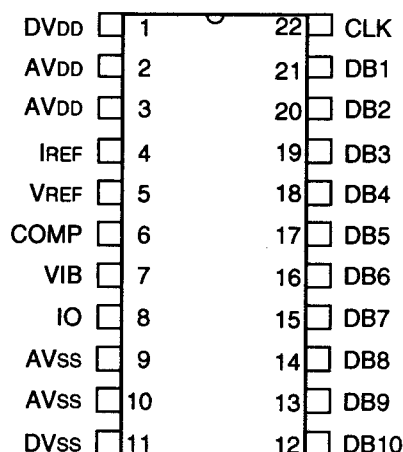
Description of this IC is as follows:



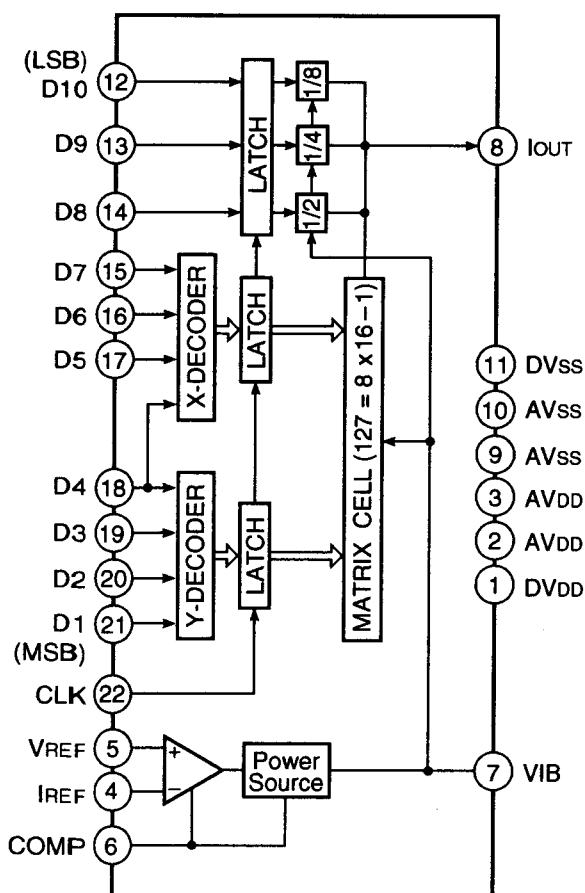
Pin	Name	I/O	Description
1	$\overline{OE}$	I	Output Enable signal input terminal.
2	DVSS	-	Ground terminal for Digital Circuit.
3	D0	O	Digital Data D0 (LSB) output terminal.
4	D1	O	Digital Data D1 (2nd.) output terminal.
5	D2	O	Digital Data D2 (3rd.) output terminal.
6	D3	O	Digital Data D3 (4th.) output terminal.
7	D4	O	Digital Data D4 (5th.) output terminal.
8	D5	O	Digital Data D5 (6th.) output terminal.
9	D6	O	Digital Data D6 (7th.) output terminal.
10	D7	O	Digital Data D7 (MSB) output terminal.
11	DVDD	-	Power supply terminal for Digital Circuit.
12	CLOCK	I	Clock input terminal.
13	DVDD	-	Power supply terminal for Digital Circuit.
14	AVDD	-	Power supply terminal for Analog Circuit.
15	AVDD	-	Power supply terminal for Analog Circuit.
16	VRTS	O	Top Voltage output terminal.
17	VRT	I	Top Voltage input terminal.
18	AVDD	-	Power supply terminal for Analog Circuit.
19	VIN	I	Analog signal input terminal.
20	AVSS	-	Ground terminal for Analog Circuit.
21	AVSS	-	Ground terminal for Analog Circuit.
22	VRBS	O	Bottom Voltage output terminal.
23	VRB	I	Bottom Voltage input terminal.
24	AVSS	-	Ground terminal for Digital Circuit.

13. IC17 to IC20 on the Digital Process Board are using the 10-Bit D/A Converter IC MN6557AS.

Description of this IC is as follows:



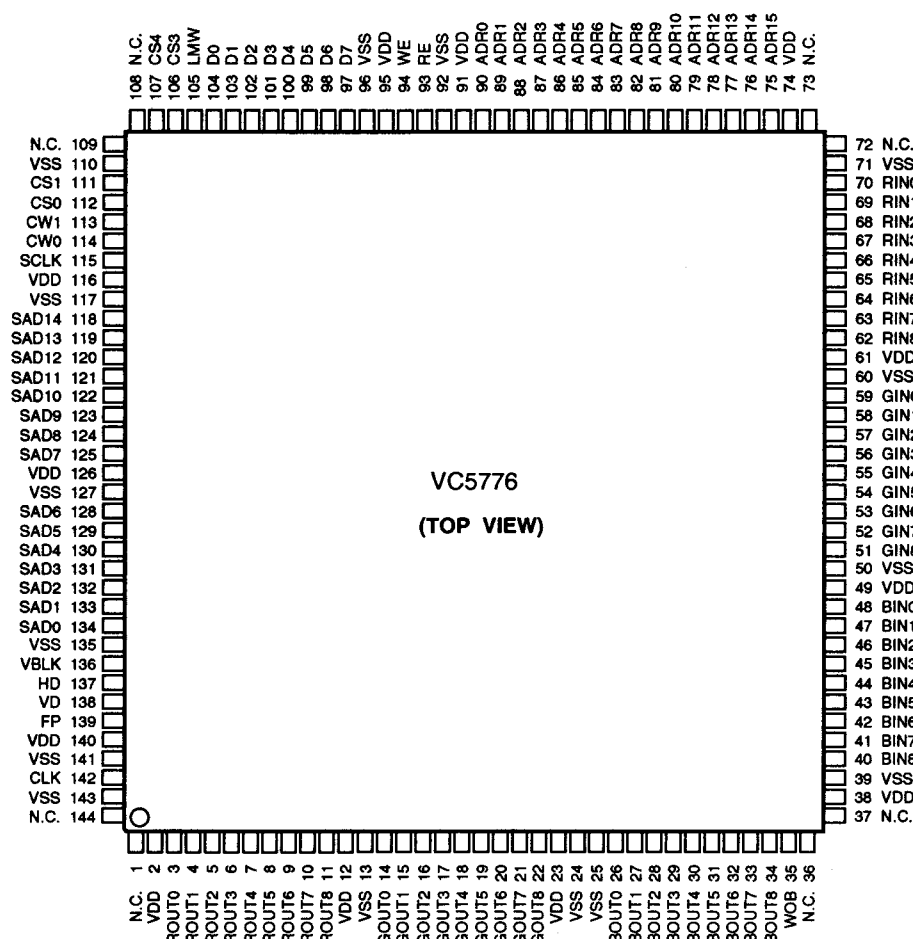
(TOP VIEW)



Pin	Name	I/O	Description
1	DVDD	-	Power supply terminal for Digital circuit.
2	AVDD	-	Power supply terminal for Analog circuit.
3	AVDD	-	Power supply terminal for Analog circuit.
4	IREF	I	Reference Current input terminal.
5	VREF	I	Reference Voltage input terminal.
6	COMP	I	Compensation input terminal.
7	VIB	I	VIB signal input terminal.
8	IO	O	Analog Data Current output terminal.
9	AVSS	-	Ground terminal for Analog Circuit.
10	AVSS	-	Ground terminal for Analog Circuit.
11	DVSS	-	Ground terminal for Digital Circuit.
12	DB10	I	Digital Data input terminals. (10-Bit)
13	DB9	I	
14	DB8	I	
15	DB7	I	
16	DB6	I	
17	DB5	I	
18	DB4	I	
19	DB3	I	
20	DB2	I	
21	DB1	I	
22	CLK	I	Clock Pulse input terminal.

14. IC1 on the Digital Process Board is using the Gate Array Logic IC YWVC5776.

Description of this IC is as follows:



Pin	Name	I/O	Description
1	N.C.	–	Non Connection.
2	VDD	–	Power supply terminal for I/O.
3	ROUT0	O	R12 signal output terminals. (9-Bit)
4	ROUT1	O	
5	ROUT2	O	
6	ROUT3	O	
7	ROUT4	O	
8	ROUT5	O	
9	ROUT6	O	
10	ROUT7	O	
11	ROUT8	O	
12	VDD	–	Power supply terminal for I/O.
13	VSS	–	Ground terminal for I/O.
14	GOUT0	O	G12 signal output terminals. (9-Bit)

Pin	Name	I/O	Description
15	GOUT1	O	G12 signal output terminals. (9-Bit)
16	GOUT2	O	
17	GOUT3	O	
18	GOUT4	O	
19	GOUT5	O	
20	GOUT6	O	
21	GOUT7	O	
22	GOUT8	O	
23	VDD	–	Power supply terminal for Core.
24	VSS	–	Ground terminal for Core.
25	VSS	–	Ground terminal for I/O.
26	BOUT0	O	B12 signal output terminals. (9-Bit)
27	BOUT1	O	
28	BOUT2	O	



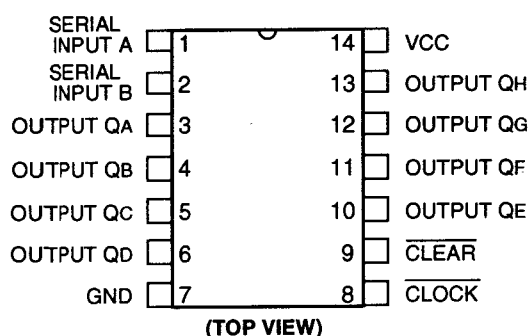
Pin	Name	I/O	Description
29	BOUT3	O	B12 signal output terminals. (9-Bit)
30	BOUT4	O	
31	BOUT5	O	
32	BOUT6	O	
33	BOUT7	O	
34	BOUT8	O	
35	WOB	O	
36	N.C.	–	
37	N.C.	–	Non Connection.
38	VDD	–	Power supply terminal for I/O.
39	VSS	–	Ground terminal for I/O.
40	BIN8	I	(MSB)
41	BIN7	I	BA/D signal input terminals. (9-Bit)
42	BIN6	I	
43	BIN5	I	
44	BIN4	I	
45	BIN3	I	
46	BIN2	I	
47	BIN1	I	
48	BIN0	I	(LSB)
49	VDD	–	Power supply terminal for I/O.
50	VSS	–	Ground terminal for I/O.
51	GIN8	I	(MSB)
52	GIN7	I	GA/D signal input terminals. (9-Bit)
53	GIN6	I	
54	GIN5	I	
55	GIN4	I	
56	GIN3	I	
57	GIN2	I	
58	GIN1	I	
59	GIN0	I	(LSB)
60	VSS	–	Ground terminal for Core.
61	VDD	–	Power supply terminal for Core.
62	RIN8	I	(MSB)
63	RIN7	I	RA/D signal input terminals. (9-Bit)
64	RIN6	I	
65	RIN5	I	
66	RIN4	I	
67	RIN3	I	
68	RIN2	I	
69	RIN1	I	
70	RIN0	I	(LSB)
71	VSS	–	Ground terminal for I/O.
72	N.C.	–	Non Connection.
73	N.C.	–	Non Connection.
74	VDD	–	Power supply terminal for I/O.
75	ADR15	I	(MSB)
76	ADR14	I	Address input terminals. (16-Bit)
77	ADR13	I	
78	ADR12	I	

Pin	Name	I/O	Description
79	ADR11	I	Address input terminals. (16-Bit)
80	ADR10	I	
81	ADR9	I	
82	ADR8	I	
83	ADR7	I	
84	ADR6	I	
85	ADR5	I	
86	ADR4	I	
87	ADR3	I	
88	ADR2	I	
89	ADR1	I	
90	ADR0	I	
91	VDD	–	
92	VSS	–	
93	WE	I	
94	RE	I	
95	VDD	–	Power supply terminal for I/O.
96	VSS	–	Ground terminal for I/O.
97	D7	I/O	(MSB)
98	D6	I/O	Data Tri-state input/output terminals. (8-Bit)
99	D5	I/O	
100	D4	I/O	
101	D3	I/O	
102	D2	I/O	
103	D1	I/O	
104	D0	I/O	
105	LMW	O	LMW signal output terminal.
106	CS3	O	CS3 signal output terminal.
107	CS4	O	CS4 signal output terminal.
108	N.C.	–	Non Connection.
109	N.C.	–	Non Connection.
110	VSS	–	Ground terminal for I/O.
111	CS1	O	CS1 signal output terminal.
112	CS0	O	CS0 signal output terminal.
113	CW1	O	CW1 signal output terminal.
114	CW0	O	CW0 signal output terminal.
115	SCLK	O	SCLK Pulse output terminal.
116	VDD	–	Power supply terminal for Core.
117	VSS	–	Ground terminal for Core
118	SAD14	O	(MSB)
119	SAD13	O	SAD signal output terminals. (15-bit)
120	SAD12	O	
121	SAD11	O	
122	SAD10	O	
123	SAD9	O	
124	SAD8	O	
125	SAD7	O	
126	VDD	–	Power supply terminal for I/O.

Pin	Name	I/O	Description
127	VDD	–	Power supply terminal for I/O.
128	SAD6	O	SAD signal output terminals. (15-Bit)
129	SAD5	O	
130	SAD4	O	
131	SAD3	O	
132	SAD2	O	
133	SAD1	O	
134	SAD0	O	(LSB)
135	VSS	–	Ground terminal for I/O.
136	VBLK	I	VBLK signal input terminal.
137	HD	I	HD signal input terminal.
138	VD	I	VD signal input terminal.
139	FP	I	FP signal input terminal.
140	VDD	–	Power supply terminal for I/O.
141	VSS	–	Ground terminal for I/O.
142	CLK	I	CLK Pulse input terminal.
143	VSS	–	Ground terminal for I/O.
144	N.C.	–	Non connection.

15. IC10 on the Digital Process Board is using the 8-Bit Shift Register IC YWHD74AC164F.

Description of this IC is as follows:



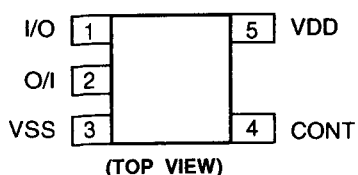
Truth Table

INPUTS		Function
CLEAR	CLOCK	
H	$\downarrow$	Right Shift
$\downarrow$	*	Clear

\* : Don't care.

16. IC21 on the Digital Process Board and IC6 on the Sync Board are using the Single Analog Switch/Multiplexer/Demultiplexer IC YWTC4S66FR.

Description of this IC is as follows:

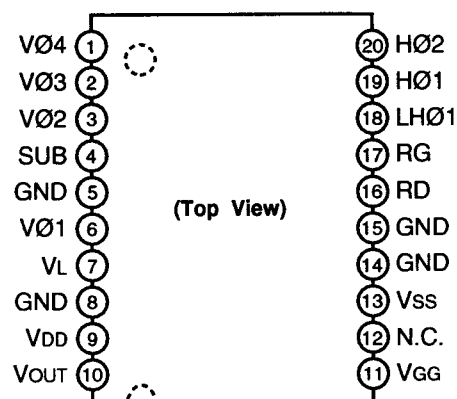


Truth Table

Input Control	Switch I/O – O/I
L	OFF
H	ON

17. IC101, IC201 and IC301 on the Sensor Board are using the CCD Image Sensor IC ICX038BLA.

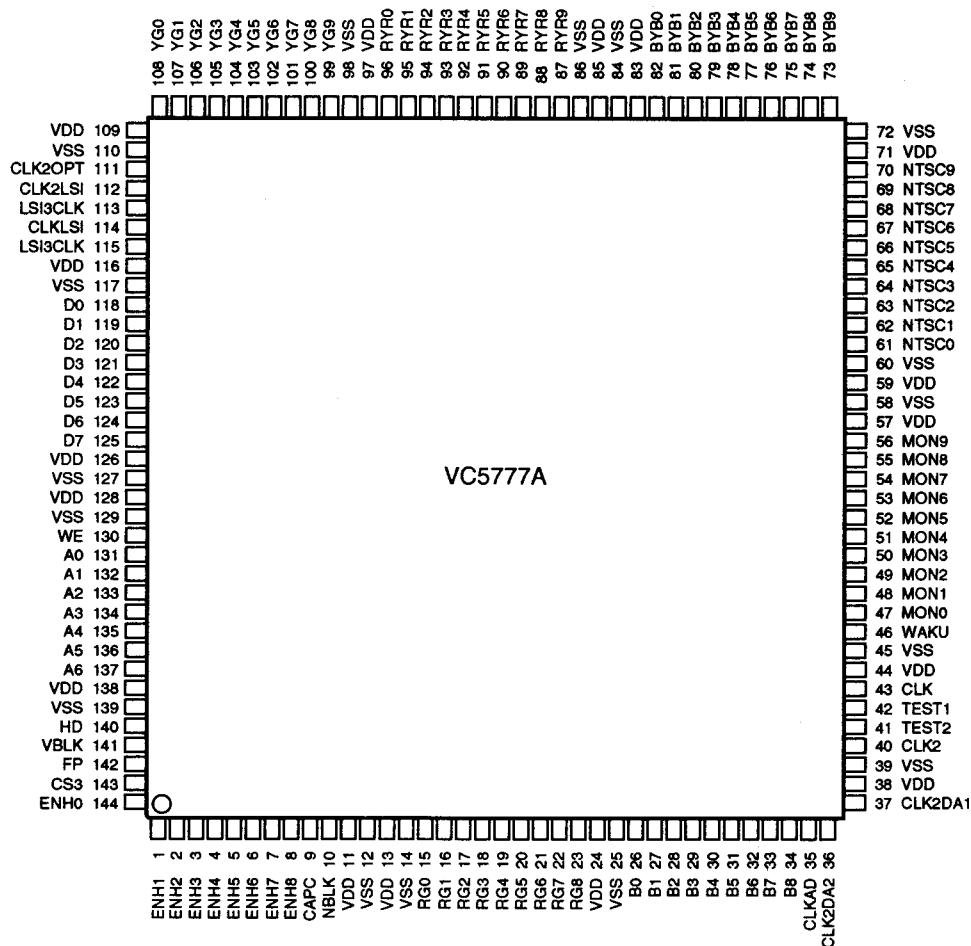
Description of this IC is as follows:



Pin	Name	I/O	Description
1	V04	I	Vertical Register Transfer Clock input terminal.
2	V03	I	Vertical Register Transfer Clock input terminal.
3	V02	I	Vertical Register Transfer Clock input terminal.
4	SUB	–	Board (Overflow Drain).
5	GND	–	Ground terminal.
6	V01	I	Vertical Register Transfer Clock input terminal.
7	VL	I	Bias supply terminal for protection transistor.
8	GND	–	Ground terminal.
9	VDD	–	Power supply terminal for Drain Output Amp.
10	VOUT	O	Signal output terminal.
11	VGG	–	Gate bias supply terminal for Output Amp.
12	N.C.	–	Non connection.
13	Vss	–	Power supply terminal for Source Output Amp.
14	GND	–	Ground terminal.
15	GND	–	Ground terminal.
16	RD	I	Reset Drain Bias input terminal.
17	RG	I	Reset Gate Clock input terminal.
18	LH01	I	Transfer Clock input terminal for last stage of Horizontal register.
19	H01	I	Horizontal Register Transfer Clock input terminal.
20	H02	I	Horizontal Register Transfer Clock input terminal.

18. IC3 on the Digital Process Board is using the Gate Array Logic IC YWVC5777A.

Description of this IC is as follows:



(TOP VIEW)

Pin	Name	I/O	Description
1	ENH1	I	EN43 signal input terminals. (9-Bit)
2	ENH2	I	
3	ENH3	I	
4	ENH4	I	
5	ENH5	I	
6	ENH6	I	
7	ENH7	I	
8	ENH8	I	
9	CAPC	I	CAPC signal input terminal.
10	NBLK	I	NBLK signal input terminal.
11	VDD	—	Power supply terminal for I/O.
12	VSS	—	Ground terminal for I/O.
13	VDD	—	Power supply terminal for Core.
14	VSS	—	Ground terminal for Core.

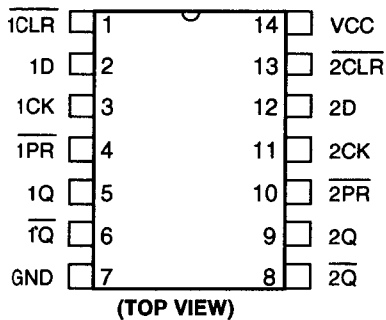
Pin	Name	I/O	Description
15	RG0	I	RG23 signal input terminals. (9-Bit)
16	RG1	I	
17	RG2	I	
18	RG3	I	
19	RG4	I	
20	RG5	I	
21	RG6	I	
22	RG7	I	
23	RG8	I	(MSB)
24	VDD	—	Power supply terminal br I/O.
25	VSS	—	Ground terminal for I/O
26	B0	I	(LSB)
27	B1	I	
28	B2	I	

Pin	Name	I/O	Description
29	B3	I	B23 signal input terminals. (9-Bit)
30	B4	I	
31	B5	I	
32	B6	I	
33	B7	I	
34	B8	I	(MSB)
35	CLKAD	O	CLKAD Pulse output terminal.
36	CLK2DA2	O	CLK2DA2 Pulse output terminal.
37	CLK2DA1	O	CLK2DA1 Pulse output terminal.
38	VDD	–	Power supply terminal for I/O.
39	VSS	–	Ground terminal for I/O.
40	CLK2	O	CLK2 Pulse output terminal.
41	TEST2	I	Test terminal 2.
42	TEST1	I	Test terminal 1.
43	CLK	O	CLK Pulse output terminal.
44	VDD	–	Power supply terminal for I/O.
45	VSS	–	Ground terminal for I/O.
46	WAKU	O	WAKU signal output terminal.
47	MON0	O	(LSB)
48	MON1	O	Monitor signal output terminals. (10-Bit)
49	MON2	O	
50	MON3	O	
51	MON4	O	
52	MON5	O	
53	MON6	O	
54	MON7	O	
55	MON8	O	
56	MON9	O	(MSB)
57	VDD	–	Power supply terminal for I/O.
58	VSS	–	Ground terminal for I/O.
59	VDD	–	Power supply terminal for Core.
60	VSS	–	Ground terminal for Core.
61	NTSC0	O	(LSB)
62	NTSC1	O	NTSC signal output terminals. (10-Bit)
63	NTSC2	O	
64	NTSC3	O	
65	NTSC4	O	
66	NTSC5	O	
67	NTSC6	O	
68	NTSC7	O	
69	NTSC8	O	
70	NTSC9	O	(MSB)
71	VDD	–	Power supply terminal for I/O.
72	VSS	–	Ground terminal for I/O.
73	BYB9	O	(MSB)
74	BYB8	O	BYB signal output terminals. (10-Bit)
75	BYB7	O	
76	BYB6	O	
77	BYB5	O	
78	BYB4	O	

Pin	Name	I/O	Description
79	BYB3	O	BYB signal output terminals. (10-Bit)
80	BYB2	O	
81	BYB1	O	
82	BYB0	O	(LSB)
83	VDD	–	Power supply terminal for I/O.
84	VSS	–	Ground terminal for I/O.
85	VDD	–	Power supply terminal for Core.
86	VSS	–	Ground terminal for Core.
87	RYR9	O	(MSB)
88	RYR8	O	RYR signal output terminals. (10-Bit)
89	RYR7	O	
90	RYR6	O	
91	RYR5	O	
92	RYR4	O	
93	RYR3	O	
94	RYR2	O	
95	RYR1	O	
96	RYR0	O	(LSB)
97	VDD	–	Power supply terminal for I/O.
98	VSS	–	Ground terminal for I/O.
99	YG9	O	(MSB)
100	YG8	O	YG signal output terminals. (10-Bit)
101	YG7	O	
102	YG6	O	
103	YG5	O	
104	YG4	O	
105	YG3	O	
106	YG2	O	
107	YG1	O	
108	YG0	O	(LSB)
109	VDD	–	Power supply terminal for I/O.
110	VSS	–	Ground terminal for I/O.
111	CLK2OPT	O	CLK2OPT Pulse output terminal.
112	CLK2LSI	O	CLK2LSI Pulse output terminal.
113	LSI3CLK2	I	LSI3CLK2 Pulse input terminal.
114	CLKLSI	O	CLKLSI Pulse output terminal.
115	LSI3CLK	I	LSI3CLK Pulse input terminal.
116	VDD	–	Power supply terminal for I/O.
117	VSS	–	Ground terminal for I/O.
118	D0	I	(LSB)
119	D1	I	Data input terminals. (8-Bit)
120	D2	I	
121	D3	I	
122	D4	I	
123	D5	I	
124	D6	I	(MSB)
125	D7	I	
126	VDD	–	Power supply terminal for I/O.
127	VSS	–	Ground terminal for I/O.
128	VDD	–	Power supply terminal for Core.

Pin	Name	I/O	Description
129	VSS	—	Ground terminal for I/O.
130	WE	I	Write enable signal input terminal.
131	ADR0	I	Address input terminals. (7-Bit)
132	ADR1	I	
133	ADR2	I	
134	ADR3	I	
135	ADR4	I	
136	ADR5	I	
137	ADR6	I	
138	VDD	—	Power supply terminal for I/O.
139	VSS	—	Ground terminal for I/O.
140	HD	I	HD signal input terminal.
141	VBLK	I	VBLK signal input terminal.
142	FP	I	FP signal input terminal.
143	CS3	I	CS3 signal input terminal.
144	ENH0	I	ENH43 signal input terminals. (9-Bit)

19. IC15 on the Digital Process Board is using the Dual D-FFs with Preset and Clear IC YWTC74AC74F.  
Description of this IC is as follows:



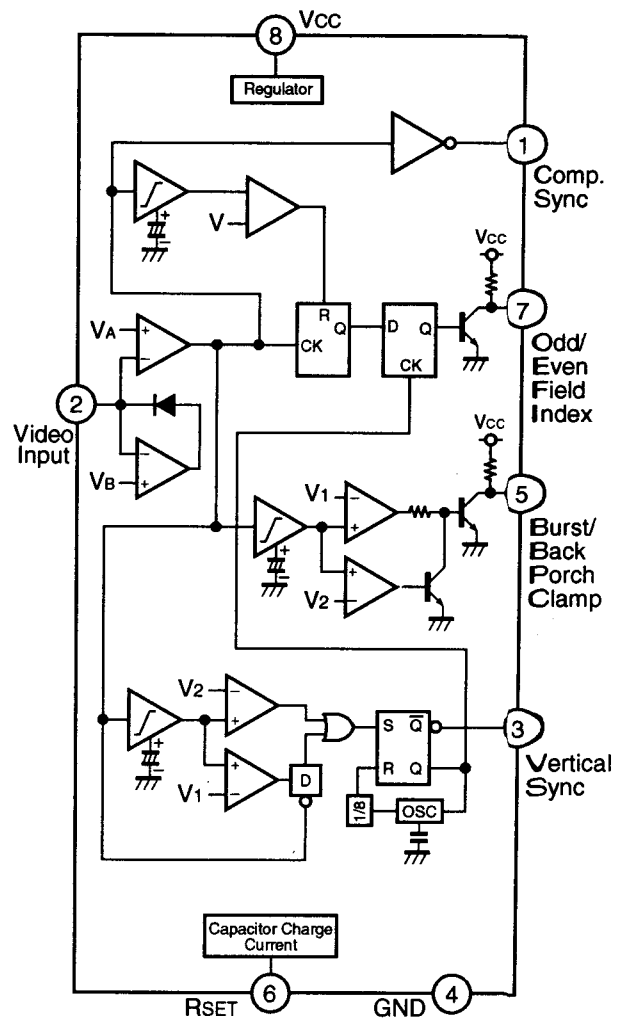
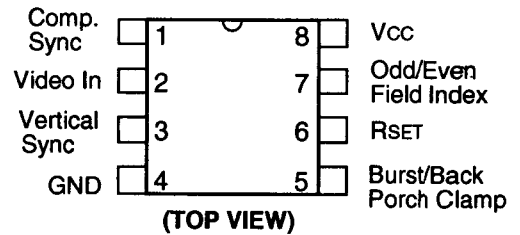
Truth Table

INPUTS				OUTPUTS		Function
CLR	PR	D	CK	Q	Q̄	
L	H	*	*	L	H	Clear
H	L	*	*	H	L	Preset
L	L	*	*	H	H	—
H	H	L	f	L	H	—
H	H	H	f	H	L	—
H	H	*	↓	Qn	Qn	No Change

\* : Don't care.

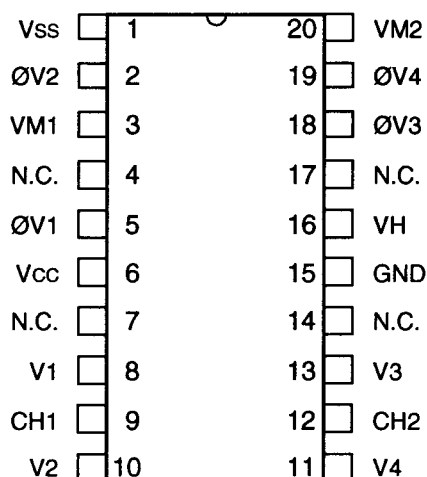
20. IC11 on the Sync Board is using the Sync Separator IC YWLM1881M.

Description of this IC is as follows:

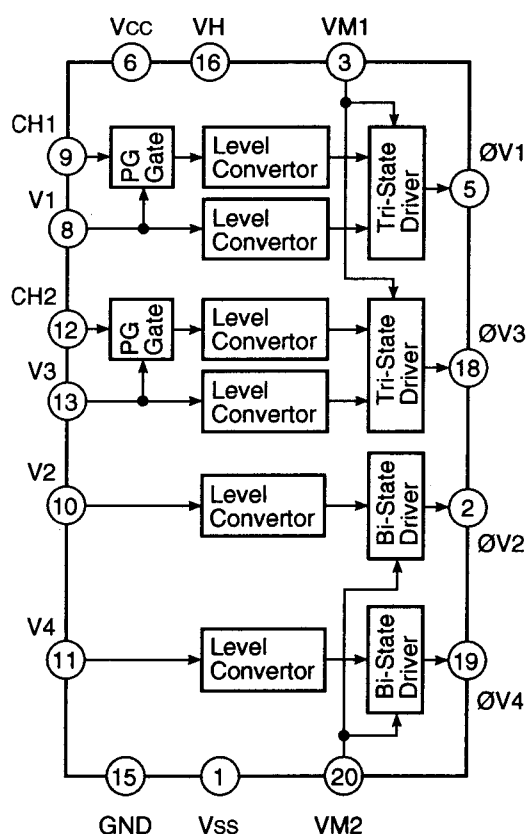


21. IC2 on the Sensor Board is using the Vertical Driver IC YWUPD16502GS.

Description of this IC is as follows:



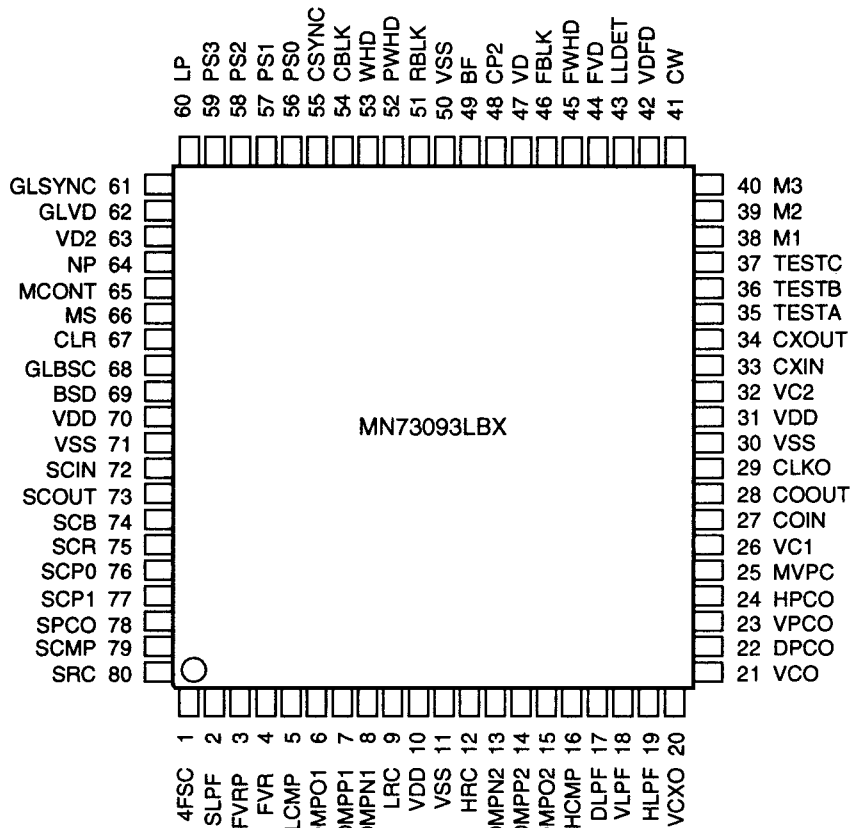
(TOP VIEW)



Pin	Name	I/O	Description
1	VSS	-	Negative Voltage supply terminal.
2	ØV2	O	Bi-State output terminal 1.
3	VM1	-	Middle Voltage supply terminal for Tri-State Drivers.
4	N.C.	-	Non Connection.
5	ØV1	O	Tri-State input terminal 1.
6	Vcc	-	Power supply for input circuit section.
7	N.C.	-	Non Connection.
8	V1	I	Tri-State input terminal 1.
9	CH1	I	Photodiode Gate input terminal 1.
10	V2	I	Bi-State input terminal 1.
11	V4	I	Bi-State input terminal 2.
12	CH2	I	Photodiode Gate input terminal 2.
13	V3	I	Tri-State input terminal 2.
14	N.C.	-	Non Connection.
15	GND	-	Ground terminal.
16	VH	-	High Voltage supply terminal for Tri-State Drivers.
17	N.C.	-	Non Connection.
18	ØV3	O	Tri-State input terminal 2.
19	ØV4	O	Bi-State output terminal 2.
20	VM2	-	Middle Voltage supply terminal for Bi-State Drivers.

22. IC3 on the Sync Board is using the Sync Generator IC MN73093LBX.

Description of this IC is as follows:



(TOP VIEW)

Pin	Name	I/O	Description
1	4FSC	O	4FSC Signal output terminal.
2	SLPF	I	SLPF signal input terminal.
3	FVRP	I	FVRP signal input terminal.
4	FVR	I	FVR signal input terminal.
5	LCMP	I	LCMP signal input terminal.
6	COMPO1	O	COMPO1 signal output terminal.
7	COMPP1	O	COMPP1 signal output terminal.
8	COMPN1	O	COMPN1 signal output terminal.
9	LRC	O	LRC signal output terminal.
10	VDD	-	+5V supply terminal.
11	VSS	-	Ground terminal.

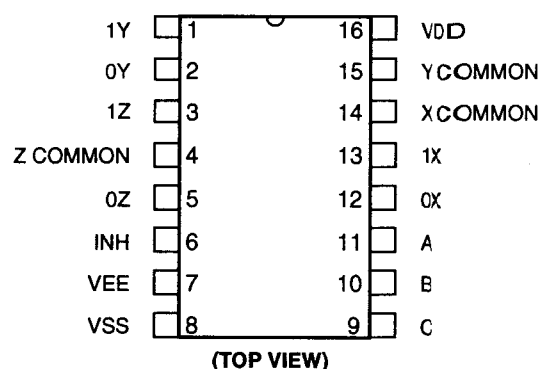
Pin	Name	I/O	Description
12	HRC	O	HRC signal output terminal.
13	COMPN2	O	COMPN2 signal output terminal.
14	COMPP2	O	COMPP2 signal output terminal.
15	COMPO2	O	COMPO2 signal output terminal.
16	HCMP	I	HCMP signal input terminal.
17	DLPF	I	DLPF signal input terminal.
18	VLPF	I	VLPF signal input terminal.
19	HLPF	I	HLPF signal input terminal.
20	VCXO	O	VCXO signal output terminal.
21	VCO	O	VCO signal output terminal.
22	DPCO	O	DPCO signal output terminal.

Pin	Name	I/O	Description
23	VPCO	O	VPCO signal input terminal.
24	HPCO	O	HPCO signal input terminal.
25	MVPC	I	MVPC signal input terminal.
26	VC1	O	VC1 signal input terminal.
27	COIN	I	COIN signal input terminal.
28	COOUT	O	COOUT signal output terminal.
29	CLKO	O	CLKO signal output terminal.
30	VSS	–	Ground terminal.
31	VDD	–	+5V supply terminal.
32	VC2	O	VC2 signal input terminal.
33	CXIN	I	CXIN signal input terminal.
34	CXOUT	O	CXOUT signal output terminal.
35	TESTA	I	TESTA signal input terminal.
36	TESTB	I	TESTB signal input terminal.
37	TESTC	I	TESTC signal input terminal.
38	M1	I/O	M1 signal in/out terminal.
39	M2	I/O	M2 signal in/out terminal.
40	M3	I/O	M3 signal in/out terminal.
41	CW	I	CW signal input terminal.
42	VDFD	I	VDFD signal input terminal.
43	LLDET	I	LLDET signal input terminal.
44	FVD	O	FVD signal output terminal.
45	FWHD	O	FWHD signal output terminal.
46	FBLK	O	FBLK signal output terminal.
47	VD	O	VD signal output terminal.
48	CP2	O	CP2 signal output terminal.
49	BF	O	BF signal output terminal.
50	VSS	–	Ground terminal.
51	RBLK	I	RBLK signal input terminal.
52	PWHD	I	PWHD signal input terminal.
53	WHD	O	WHD signal output terminal.
54	CBLK	O	CBLK signal output terminal.
55	CSYNC	O	CSYNC signal output terminal.
56	PS0	I	PS0 signal output terminal.
57	PS1	I	PS1 signal output terminal.
58	PS2	I	PS2 signal output terminal.
59	PS3	I	PS3 signal output terminal.
60	LP	I	LP signal output terminal.
61	GLSYNC	I	GLSYNC signal output terminal.
62	GLVD	I	GLVD signal input terminal.
63	VD2	I	VD2 signal input terminal.

Pin	Name	I/O	Description
64	NP	I	NTSC/PAL switching signal input terminal. H = NTSC L = PAL
65	MCONT	I	MCONT signal input terminal.
66	MS	I	MS signal input terminal.
67	CLR	I	CLR signal output terminal.
68	GLBSC	I	GLBSC signal output terminal.
69	BSD	I	BSD signal output terminal.
70	VDD	–	+5V supply terminal.
71	VSS	–	Ground terminal.
72	SCIN	I	SCIN signal input terminal.
73	SCOUT	O	SCOUT signal output terminal.
74	SCBO	O	SCBO signal output terminal.
75	SCRO	O	SCRO signal output terminal.
76	SCP0	I	SCP0 signal input terminal.
77	SCP1	I	SCP1 signal input terminal.
78	SPCO	O	SPCO signal output terminal.
79	SCMP	I	SCMP signal output terminal.
80	SRC	O	SRC signal output terminal.

23. IC5 on the Preamp/Encoder Board, IC102, IC202 and IC302 on the Preprocess Board, IC1 on the Rear Board are using the Triple 2-ch Analog Multiplexer/Demultiplexer IC YWUPD4053BG.

Description of this IC is as follows:



Truth Table

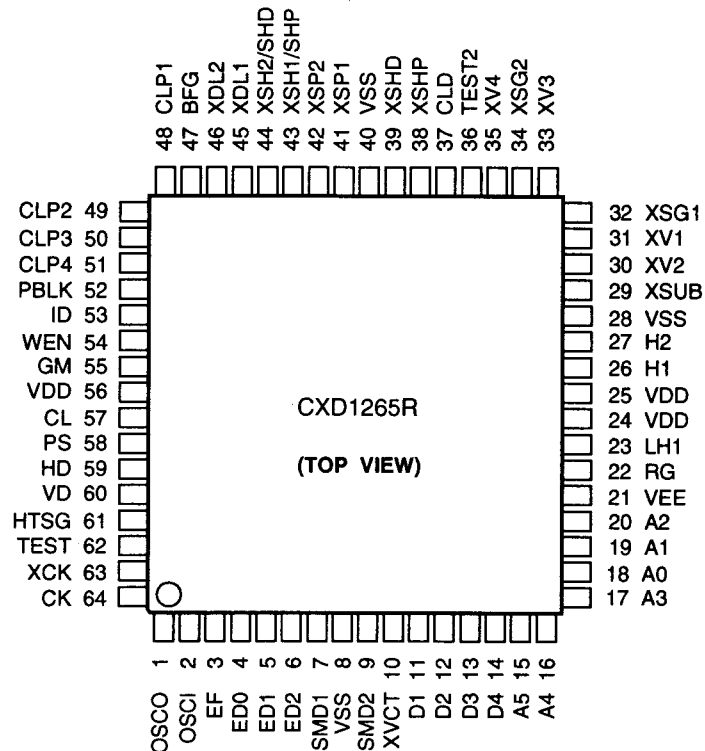
INHIBIT	C	B	A	X COMMON	Y COMMON	Z COMMON
L	L	L	L	0X	0Y	0Z
L	L	L	H	1X	0Y	0Z
L	L	H	L	0X	1Y	0Z
L	L	H	H	1X	1Y	0Z
L	H	L	L	0X	0Y	1Z
L	H	L	H	1X	0Y	1Z
L	H	H	L	0X	1Y	1Z
L	H	H	H	1X	1Y	1Z
H	*	*	*	NONE	NONE	NONE

\* : Don't care.



24. IC9 on the Drive Board is using the Timing Generator IC YWCXD1265R.

Description of this IC is as follows:



Pin	Name	I/O	Description
1	OSCO	O	Oscillation Inverter output terminal.
2	OSCI	I	Oscillation Inverter input terminal.
3	EF	I	Error Correction System Selecting signal input terminal. H = External ROM L = Serial signal from microprocessor
4	ED0	I	Shutter Speed Set signal input terminal. Strobe input terminal when Serial mode.
5	ED1	I	Shutter Speed Set signal input terminal. Clock input terminal when Serial mode.
6	ED2	I	Shutter Speed Set signal input terminal. Data input terminal when Serial mode.
7	SMD1	I	Shutter Mode Set signal input terminal.

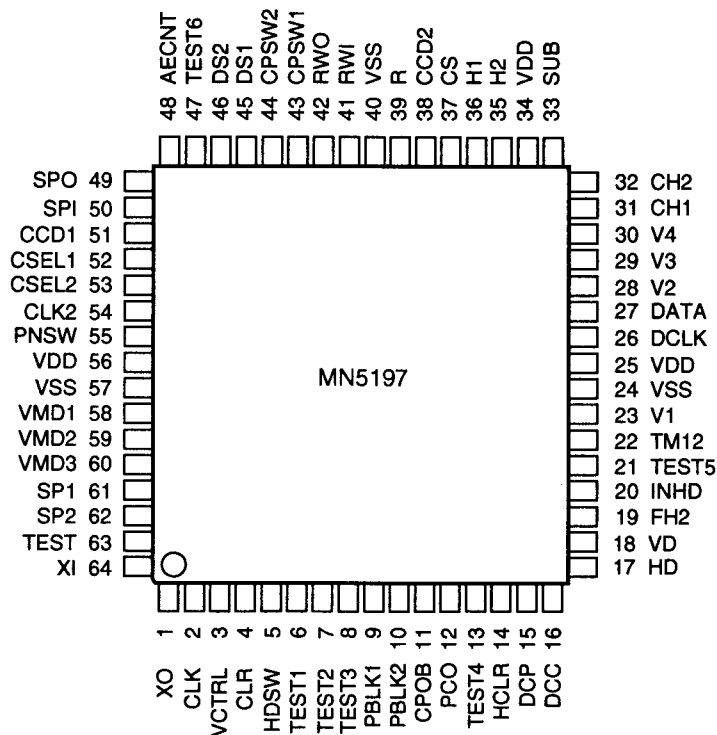
Pin	Name	I/O	Description
8	VSS	-	Ground terminal.
9	SMD2	I	Shutter Mode Set signal input terminal.
10	XVCT	O	Power Control signal output terminal for external ROM.
11	D1	I	Data input terminal when using external ROM. Not using external ROM; L = without Error Correction H = with Error Correction
12	D2	I	Data input terminal when using external ROM. Not using external ROM; L = Color H = Black and White
13	D3	I	Data input terminal when using external ROM. Not using external ROM; fixed at Low.
14	D4	I	Data input terminal when using external ROM. Not using external ROM; L = NTSC H = PAL

Pin	Name	I/O	Description
15	A5	O	Address output terminal for external ROM.
16	A4	O	Address output terminal for external ROM.
17	A3	O	Address output terminal for external ROM.
18	A0	O	Address output terminal for external ROM.
19	A0	O	Address output terminal for external ROM.
20	A0	O	Address output terminal for external ROM.
21	VEE	–	Ground terminal.
22	RG	O	Reset Gate signal output terminal.
23	LH1	O	Clock output terminal for last stage of CCD Horizontal Register.
24	VDD	–	Power supply terminal.
25	VDD	–	Power supply terminal for H1 and H2 circuits.
26	H1	O	Clock output terminal for CCD Horizontal Register Drive.
27	H2	O	Clock output terminal for CCD Horizontal Register Drive.
28	Vss	–	Ground terminal for H1 and H2 circuit.
29	XSUB	O	CCD Charge Clear Pulse output terminal.
30	XV2	O	Clock output terminal for CCD Vertical Register Drive.
31	XV1	O	Clock output terminal for CCD Vertical Register Drive.
32	XSG1	O	CCD Sensor Charge Read Out Pulse output terminal.
33	XV3	O	Clock output terminal for CCD Vertical Register Drive.
34	XSG2	O	CCD Sensor Charge Read Out Pulse output terminal.
35	XV4	O	Clock output terminal for CCD Vertical Register Drive.
36	TEST2	I	Test input terminal; Normally fixed at Low.
37	CLD	O	4fsc Clock output terminal.
38	XSHP	O	Pre-Charge Level Sample and Hold Pulse output terminal.
39	XSHD	O	Data Sample and Hold Pulse output terminal.
40	Vss	–	Ground terminal.
41	XSP1	O	Chroma Separation Sample and Hold Pulse output terminal. Stop at Black and White mode.
42	XSP2	O	Chroma Separation Sample and Hold Pulse output terminal. Stop at Black and White mode.

Pin	Name	I/O	Description
43	XSH1/SHP	O	Switching Sample and Hold Pulse/Pre-Charge Level Sample and Hold Pulse (Black and White mode) output terminal.
44	XSH2/SHP	O	Switching Sample and Hold Pulse/Pre-Charge Level Sample and Hold Pulse (Black and White mode) output terminal.
45	XDL1	O	Clock output terminal for Delay Line. Stop at Black and White mode.
46	XDL2	O	Clock output terminal for Delay Line. Stop at Black and White mode.
47	BFG	O	Encoder Chroma Modulator Pulse output terminal. Error Position Pointer Pulse when GM = High. Stop at Black and White mode.
48	CLP1	O	Clamp signal output terminal.
49	CLP2	I/O	Clamp signal output terminal. Standby Mode Switching signal input terminal when GM = High.
50	CLP3	I/O	Clamp signal output terminal. Standby Mode Switching signal input terminal when GM = High.
51	CLP4	O	Clamp signal output terminal.
52	PBLK	O	Pre-Blanking Pulse output terminal.
53	ID	O	Line Identification signal output terminal.
54	WEN	O	Write Enable signal output terminal (only when slow speed shutter).
55	GM	I	H = Digital Signal Process L = Analog Signal Process
56	VDD	–	Power supply terminal.
57	CL	O	4fsc Clock output terminal.
58	PS	I	Electronic Shutter Speed mode switching signal input terminal. H = Parallel Input L = Serial Input
59	HD	I	Horizontal Sync signal input terminal.
60	VD	I	Vertical Sync signal input terminal.
61	HTSG	I	XSG1, 2 Control signal input terminal. H = XSG1, 2 generate L = XSG1, 2 stop
62	TEST	I	Test signal input terminal.
63	XCK	O	8fsc Clock output terminal.
64	CK	I	8fsc Clock input terminal.

25. IC3 on the Drive Board is using the 1/3" 510/670/768H CCD Driver with Phase Comparator IC MN5197.

Description of this IC is as follows:



(TOP VIEW)

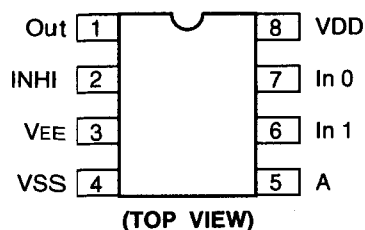
Pin	Name	I/O	Description
1	XO	O	Oscillator output terminal.
2	CLK	O	CLK signal output terminal.
3	VCTRL	I	VCTRL signal input terminal.
4	CLR	I	CLR signal input terminal.
5	HDSW	I	HDSW signal input terminal.
6	TEST1	I	Test terminal.
7	TEST2	I	Test terminal.
8	TEST3	I	Test terminal.
9	PBLK1	O	PBLK1 signal output terminal.
10	PBLK2	O	PBLK2 signal output terminal.
11	CPOB	O	CPOB signal output terminal.
12	PCO	O	PCO signal output terminal.
13	TEST4	I	Test terminal.
14	HCLR	O	HCLR signal output terminal.
15	DCP	O	DCP signal output terminal.
16	DCC	O	DCC signal output terminal.

Pin	Name	I/O	Description
17	HD	I	HD signal input terminal.
18	VD	I	VD signal input terminal.
19	FH2	O	FH2 signal output terminal.
20	INHD	O	INHD signal output terminal.
21	TEST5	I	Test terminal.
22	TM12	I	TM12 signal input terminal.
23	V1	O	V1 signal output terminal.
24	VSS	-	Ground terminal.
25	VDD	-	Power supply terminal.
26	DCLK	I	DCLK signal input terminal.
27	DATA	I	DATA input terminal.
28	V2	O	V2 signal output terminal.
29	V3	O	V3 signal output terminal.
30	V4	O	V4 signal output terminal.
31	CH1	O	CH1 signal output terminal.
32	CH2	O	CH2 signal output terminal.

Pin	Name	I/O	Description
33	SUB	O	SUB signal output terminal.
34	VDD	–	Power supply terminal.
35	H1	O	H1 signal output terminal.
36	H2	O	H2 signal output terminal.
37	CS	I	CS signal input terminal.
38	CCD2	I	CCD2 signal input terminal.
39	R	O	R signal output terminal.
40	VSS	–	Ground terminal.
41	RWI	I	RWI signal input terminal.
42	RWO	O	RWO signal output terminal.
43	CPSW1	I	CPSW1 signal input terminal.
44	CPSW2	I	CPSW2 signal input terminal.
45	DS1	O	DS1 signal output terminal.
46	DS2	O	DS2 signal output terminal.
47	TEST6	I	Test terminal.
48	AECNT	I	AECNT signal input terminal.
49	SPO	O	SPO signal output terminal.
50	SPI	I	SPI signal input terminal.
51	CCD1	I	CCD1 signal input terminal.
52	CSEL1	I	CSEL1 signal input terminal.
53	CSEL2	I	CSEL2 signal input terminal.
54	CLK2	O	CLK2 signal output terminal.
55	PNSW	I	PNSW signal input terminal.
56	VDD	–	Power supply terminal.
57	VSS	–	Ground terminal.
58	VMD1	I	VMD1 signal input terminal.
59	VMD2	I	VMD2 signal input terminal.
60	VMD3	I	VMD3 signal input terminal.
61	SP1	O	SP1 signal output terminal.
62	SP2	O	SP2 signal output terminal.
63	TEST	I	Test terminal.
64	XI	I	Oscillator input terminal.

26. IC11 on the Preamp/Encoder Board, IC7, IC104, IC105, IC204, IC205, IC304 and IC305 on the Preprocess Board are using the Single Analog Multiplexer/Demultiplexer IC YWTC4W53FL.

Description of this IC is as follows:



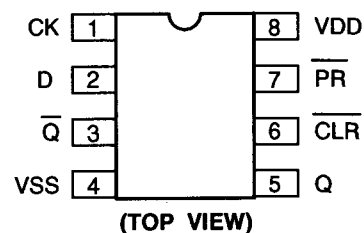
Truth Table

INPUTS	INHI	A	OUT
L	L	IN 0	
L	H	IN 1	
H	*	None	

\*: Don't Care.

27. IC18 on the Drive Board is using the Single D-FF with Preset and Clear IC YWTC7W74F.

Description of this IC is as follows:



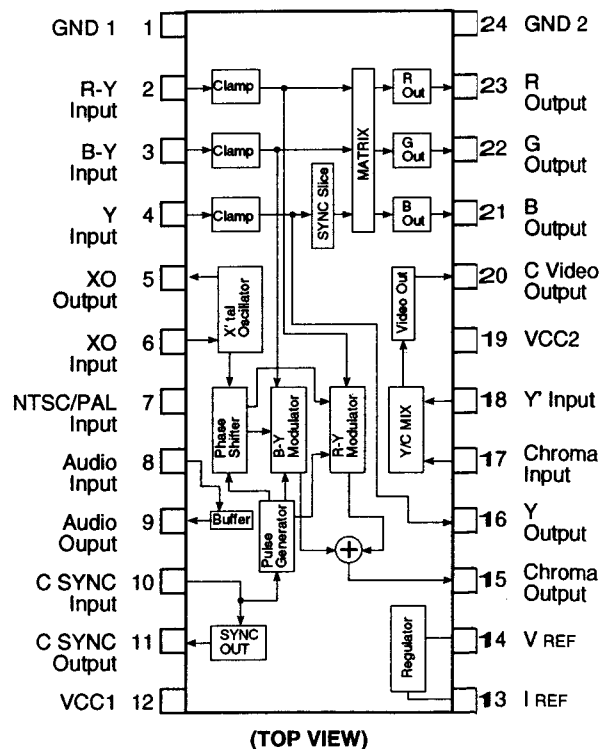
Truth Table

INPUTS				OUTPUTS		Function
CLR	PR	D	CK	Q	$\bar{Q}$	
L	H	*	*	L	H	Clear
H	L	*	*	H	L	Preset
L	L	*	*	H	H	—
H	H	L	f	L	H	—
H	H	H	f	H	L	—
H	H	*	↓	Qn	$\bar{Q}n$	No Change

\* : Don't care.

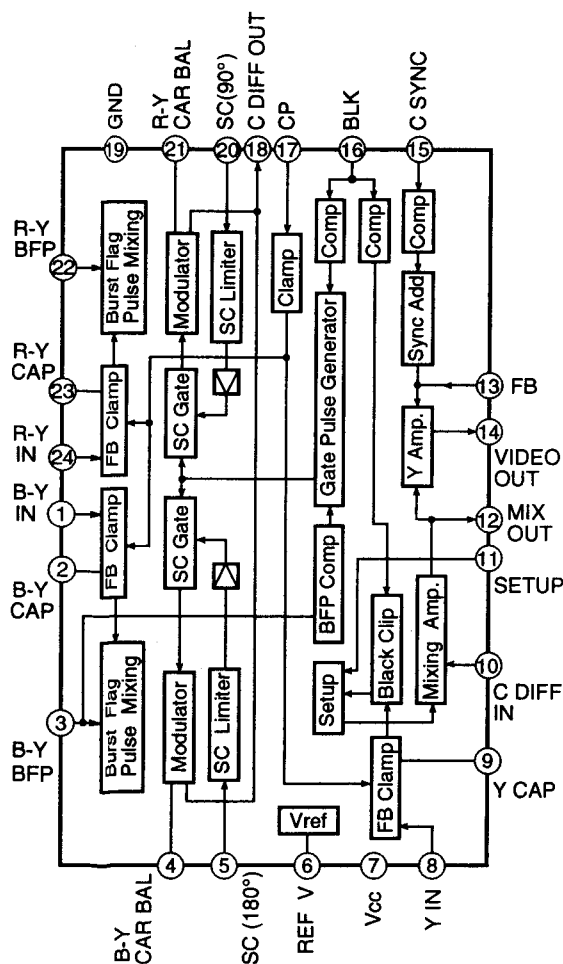
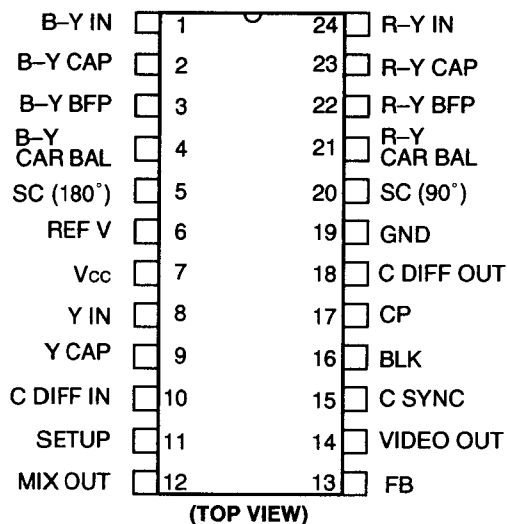
28. IC6 on the Encoder Board is using the Video Encoder IC YWCXA1229M.

Description of this IC is as follows:



29. IC3 on the Preamp/Encoder Board is using the Chroma Difference Signal Encoder IC YWM51272FP.

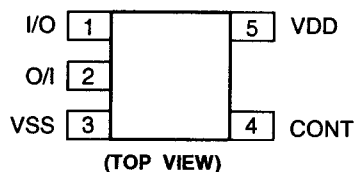
Description of this IC is as follows:



Pin	Name	I/O	Description
1	B-Y IN	I	B-Y signal input terminal.
2	B-Y CAP	-	B-Y Clamp Capacitor connecting terminal.
3	B-Y BFP	I	B-Y Burst Flag Pulse input terminal.
4	B-Y CAR BAL	I	B-Y Carrier Balance adjusting terminal.
5	SC(180°)	I	Subcarrier (180°) input terminal.
6	REF V	-	Reference Voltage terminal.
7	VCC	-	+5V Supply terminal.
8	Y IN	I	Y signal input terminal.
9	Y CAP	-	Y signal Clamp Capacitor connecting terminal.
10	C DIFF IN	I	Chroma Difference signal output terminal.
11	SETUP	I	Setup Level input terminal.
12	MIX OUT	O	Mixing Amp. signal output terminal.
13	FB	I	Video Amp. Feedback terminal.
14	VIDEO OUT	O	Video signal output terminal.
15	C SYNC	I	Composite Sync signal input terminal.
16	BLK	I	Blanking signal input terminal.
17	CP	I	Clamp Pulse input terminal.
18	C DIFF OUT	O	Chroma Difference signal output terminal.
19	GND	-	Ground terminal.
20	SC(90°)	I	Subcarrier (90°) input terminal.
21	R-Y CAR BAL	I	R-Y Carrier Balance adjusting terminal.
22	R-Y BFP	I	R-Y Burst Flag Pulse input terminal.
23	R-Y CAP	-	R-Y signal Clamp Capacitor connecting terminal.
24	R-Y IN	I	R-Y signal input terminal.

30. IC5 and IC6 on the Mother Board are using the Single Analog Switch/Multiplexer/Demultiplexer IC TC4S66 FR.

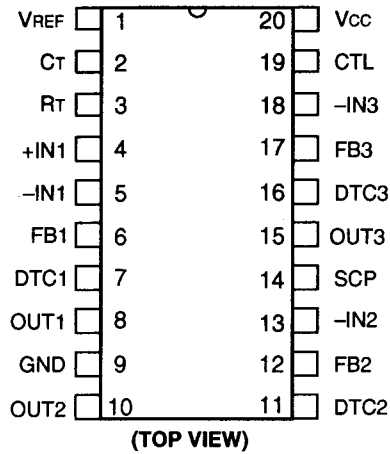
Description of this IC is as follows:



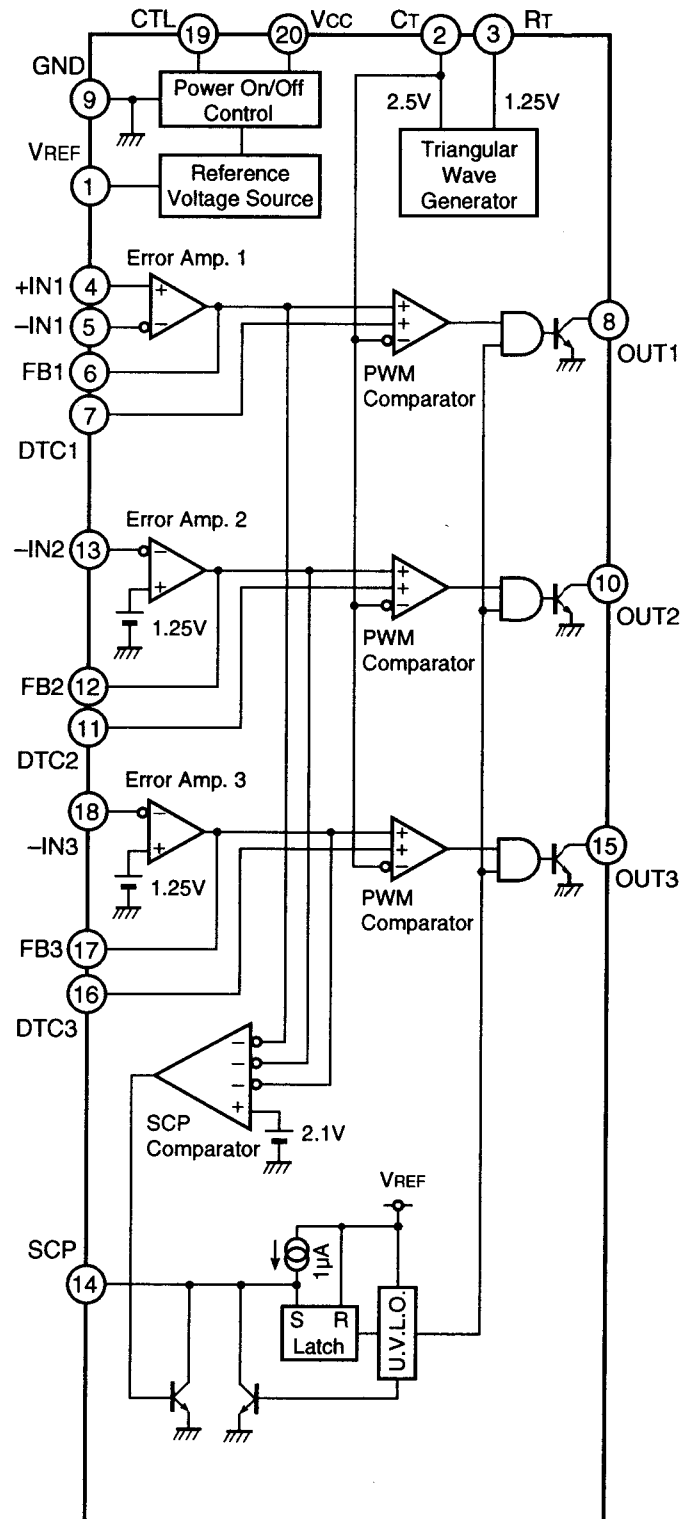
Truth Table

Input	Switch
Control I/O	O/I
L	OFF
H	ON

31. IC1 and IC2 on the Power Board is using the Switching Regulator IC YWMB3782PF.  
Description of this IC is as follows.

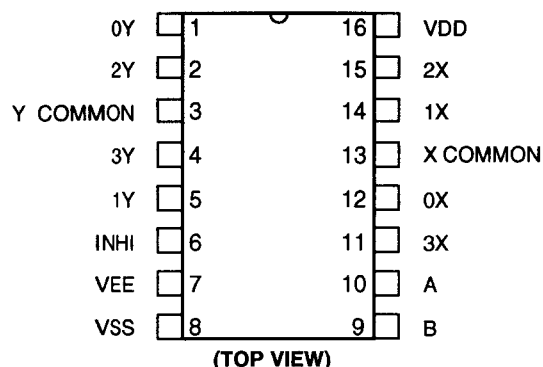


Pin	Name	I/O	Description
1	VREF	O	Reference Voltage output terminal (2.50V typical).
2	CT	-	Timing capacitor connecting terminal.
3	RT	-	Timing resistor connecting terminal.
4	+IN1	I	Non-invereting input terminal for Error Amp. 1.
5	-IN1	I	Invereting input terminal for Error Amp. 1.
6	FB1	-	Feedback terminal for Error Amp. 1.
7	DTC1	I	Dead Time Control 1 signal input terminal.
8	OUT1	O	Open Collector output terminal 1 (50mA maximum).
9	GND	-	Ground terminal.
10	OUT2	O	Open Collector output terminal 2 (50mA maximum).
11	DTC2	I	Dead Time Control 2 signal input terminal.
12	FB2	-	Feedback terminal for Error Amp. 2.
13	-IN2	I	Invereting input terminal for Error Amp. 2.
14	SCP	-	Short Circuit Protection terminal.
15	OUT3	O	Open Collector output terminal 3 (50mA maximum).
16	DTC3	I	Dead Time Control 3 signal input terminal.
17	FB3	-	Feedback terminal for Error Amp. 3.
18	-IN3	I	Invereting input terminal for Error Amp. 3.
19	CTL	I	Power Control terminal.
20	Vcc	-	Power Supply terminal.



32. IC8 on the Preamp/Encoder Board is using the Dual 4-ch Analog Multiplexers/Demultiplexers IC YWUPD4052 BG.

Description of this IC is as follows:



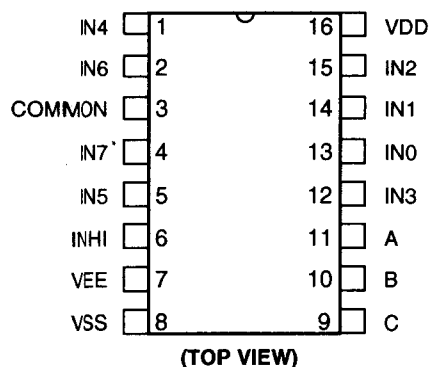
Truth Table

INHIBIT	B	A	X COMMON	Y COMMON
L	L	L	0X	0Y
L	L	H	1X	1Y
L	H	L	2X	2Y
L	H	H	3X	3Y
H	*	*	NONE	NONE

\* : Don't care.

33. IC1 on the Mother Board is using the Single 8-ch Analog Multiplexer/Demultiplexer IC YWUPD4051BG.

Description of this IC is as follows:



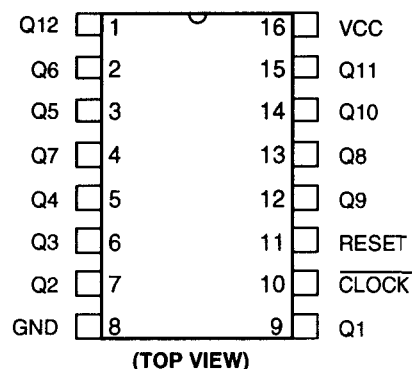
Truth Table

INHIBIT	C	B	A	COMMON
L	L	L	L	IN0
L	L	L	H	IN1
L	L	H	L	IN2
L	L	H	H	IN3
L	H	L	L	IN4
L	H	L	H	IN5
L	H	H	L	IN6
L	H	H	H	IN7
H	*	*	*	NONE

\* : Don't care.

34. IC9 on the Mother Board is using the 12-stage Binary Ripple Counter IC MC74HC4040F.

Description of this IC is as follows:



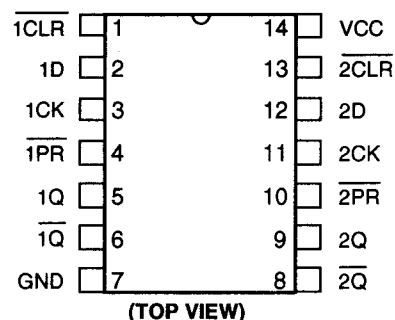
Truth Table

CLOCK	RESET	Qn OUTPUT
*	H	L
$\downarrow$	L	Don't Count
$\downarrow$	L	Binary Count

\* : Don't care.

35. IC11 on the Mother Board is using the Dual D-FFs with Preset and Clear IC YWMC74HC74AF.

Description of this IC is as follows:



Truth Table

INPUTS				OUTPUTS		Function
CLR	PR	D	CK	Q	$\bar{Q}$	
L	H	*	*	L	H	Clear
H	L	*	*	H	L	Preset
L	L	*	*	H	H	---
H	H	L	$\downarrow$	L	H	---
H	H	H	$\downarrow$	H	L	---
H	H	*	$\downarrow$	Qn	$\bar{Qn}$	No Change

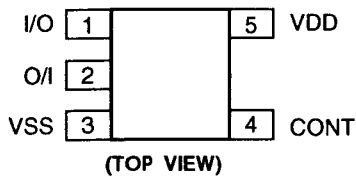
\* : Don't care.





4. IC10 and IC16 on the Demodulator Board, IC4 and IC7 on the Modulator Board are using the Single Analog Switch/Multiplexer/Demultiplexer IC YWTC4S66FR.

Description of this IC is as follows:

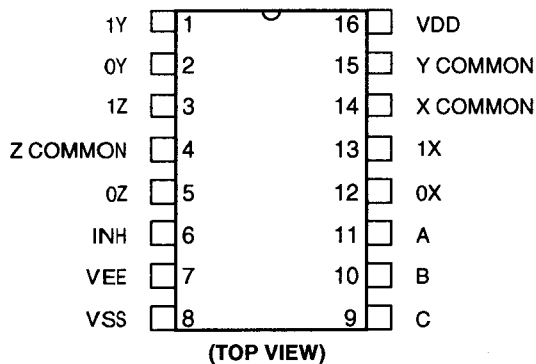


Truth Table

Input Control	Switch I/O – O/I
L	OFF
H	ON

5. IC12 and IC14 on the Demodulator Board are using the Triple 2-ch Analog Multiplexers/Demultiplexers IC YWUPD4053BG.

Description of this IC is as follows:



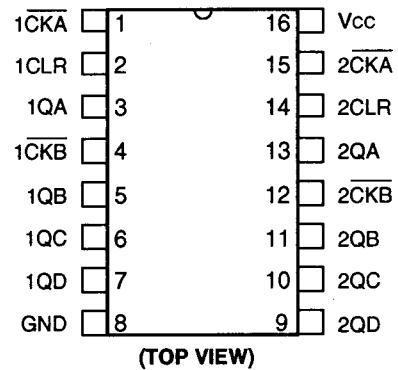
Truth Table

INHIBIT	C	B	A	X COMMON	Y COMMON	Z COMMON
L	L	L	L	0X	0Y	0Z
L	L	L	H	1X	0Y	0Z
L	L	H	L	0X	1Y	0Z
L	L	H	H	1X	1Y	0Z
L	H	L	L	0X	0Y	1Z
L	H	L	H	1X	0Y	1Z
L	H	H	L	0X	1Y	1Z
L	H	H	H	1X	1Y	1Z
H	*	*	*	NONE	NONE	NONE

\* : Don't care.

6. IC9 on the Modulator Board are using the Dual Decade Counter IC UPD74HC390G.

Description of this IC is as follows:



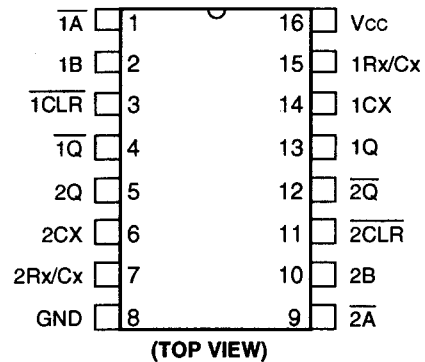
Truth Table

INPUTS			OUTPUTS			
CKA	CKB	CLR	QA	QB	QC	QD
*	*	H	L	L	L	L
↓	*	L	Binary Count up			
*	↓	L	Quinary Count up			

\* : Don't care.

7. IC13 and IC14 on the Modulator Board are using the Dual Monostable Multivibrator IC UPD74HC221 AG.

Description of this IC is as follows:



Truth Table

INPUTS			OUTPUTS		NOTE
A	B	CLR	Q	Q̄	
↓	H	H	↓	↑	Output Pulse
*	L	H	L	H	Inhibit
H	*	H	L	H	Inhibit
L	↓	H	↓	↑	Output Pulse
L	H	↓	↓	↑	Output Pulse
*	*	L	L	H	Inhibit

\* : Don't care.

# ADJUSTMENT PROCEDURE

## 1. Adjustment Procedure

- The following Test Equipments are required for adjustment of the Industrial Colour Camera WV-E550E and WV-PS550.

- Digital Multimeter
- Frequency Counter
- Oscilloscope
- Signal Generator
- Special Effects Generator
- G/L Signal Generator
- Waveform Monitor
- Vectorscope
- Underscanned Colour Video Monitor
- DC Power Supply Unit
- Auto Iris Servo Control Zoom Lens
- Lens Cable (WV-CA12T12)
- 36-pin/28-pin Camera Cable
- N-Coaxial Cable
- Remote Control Unit (WV-RC700A)
- Remote Control Box (WV-CB700AE)
- Lighting (200 footcandles (2,000 lux), 3200°K)
- Lux Meter
- In-Mega Chart
- ND-8 Filter
- D Sub/BNC Cable (WV-CA9T5)
- Logarithmic Gray Scale Chart ( Part Number: YWV2310RB99) as shown in Fig. 1-1.

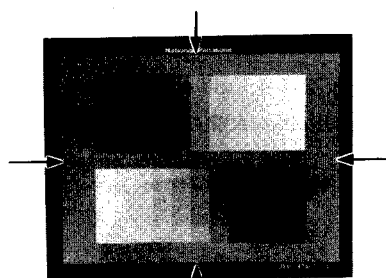


Fig. 1-1

- Extension Board (Part Number: YWV0EA0289AN) for System Control Board, Preprocess Board and Preamp/Encoder Board as shown in Fig. 1-2.

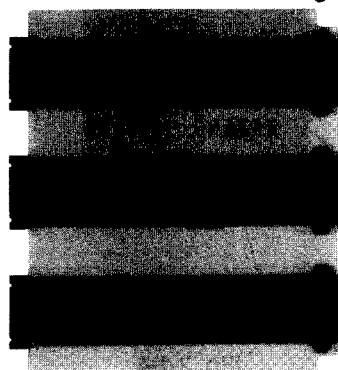


Fig. 1-2

- Extension Board (Part Number: YWV0EA0288AN) for Power Board and Digital Process Board as shown in Fig. 1-3.

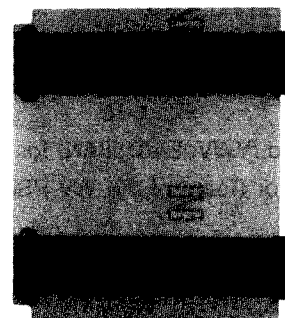


Fig. 1-3

- Extension Board (Part Number: YWV0EA0287AN) for Drive Board and Preamp/Encoder Board as shown in Fig. 1-4.



Fig. 1-4

- Flexible Cable (Part Number: YWV0EA0295AN 1 piece) for between System Control Board and Digital Process Board as shown in Fig. 1-5.

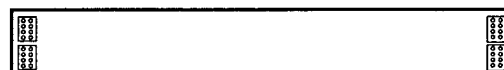


Fig. 1-5

- Flexible Cable (Part Number: YWV0EA0292AN 3 pieces) for between Rear Board and Mother Board as shown in Fig. 1-6.

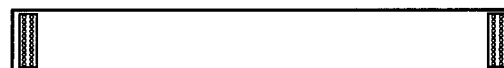


Fig. 1-6

- Flexible Cable (Part Number: YWV0EA0293AN 3 pieces) for between Sync Board and Preamp/Encoder Board as shown in Fig. 1-7.

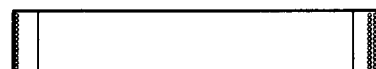


Fig. 1-7

- Flexible Cable (Part Number: YWV0EA0290AN 1 piece) for between Drive Board and Sensor Board as shown in Fig. 1-8.



Fig. 1-8

- Flexible Cable (Part Number: YWV0EA0291AN 1 piece) for between Preamp/Encoder Board and Sensor Board as shown in Fig. 1-9.



Fig. 1-9

- Flexible Cable (Part Number: YWV0EA0294AN) for between System Control Board and Digital Process Board as shown in Fig. 1-10.



Fig. 1-10

- Extension Board (YWV0EA0158AN) for Modulator Board and Demodulator Board of the WV-PS550 as shown in Fig. 1-11.

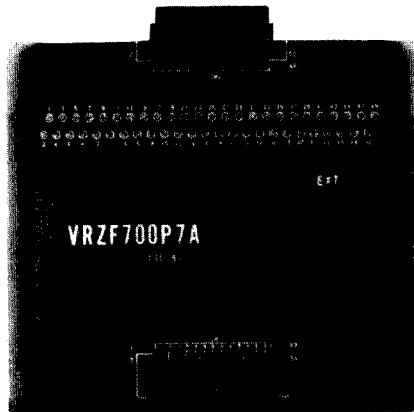


Fig. 1-11

## 2. Disassembling Procedure for Adjustment

### 2.1. WV-E550E

- Referring to Fig. 2-1-1, remove four screws fixing the Upper Cover and remove the Upper Cover.

Remove four screws.

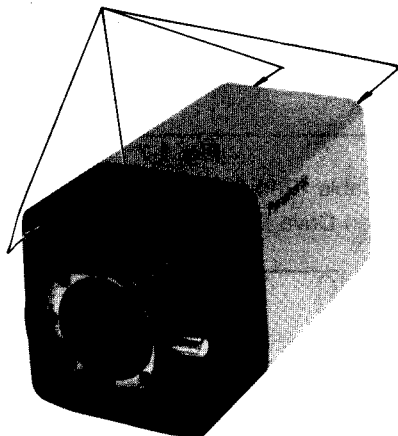
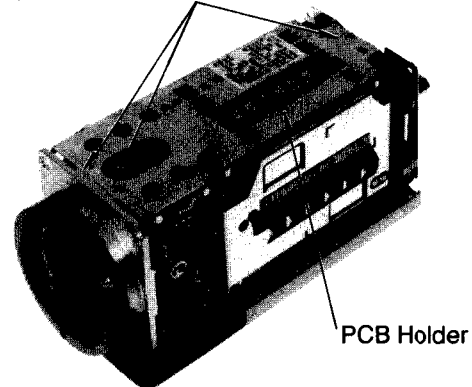


Fig. 2-1-1

- Referring to Fig. 2-1-2, remove three screws fixing the PCB Holder and remove the PCB Holder.
- Pull the Rear Board Ass'y out from three connectors on the Mother Board.

Remove three screws.

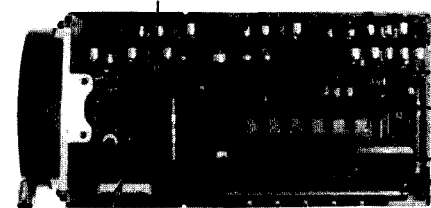


PCB Holder

Fig. 2-1-2

- Referring to Fig. 2-1-3, disconnect one Flexible Board from CN3 on the Drive Board and disconnect one Flexible Board from the CN10 on the Preamp /Encoder Board.

Disconnect Flexible Board.



Disconnect Flexible Board.

Fig. 2-1-3

- Referring to Fig. 2-1-4, pull each Board Assy out from their connectors on the Mother Board Ass'y.

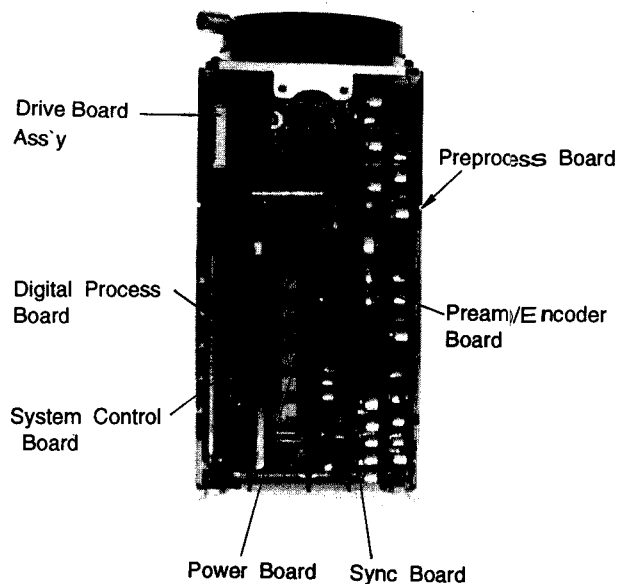


Fig. 2-1-4

## 2.2. WV-PS550

- Referring to Fig. 2-2-1, remove sixteen screws fixing the Upper Cover and the Bottom Cover, and then remove the Upper Cover and the Bottom Cover.

Remove eight screws.

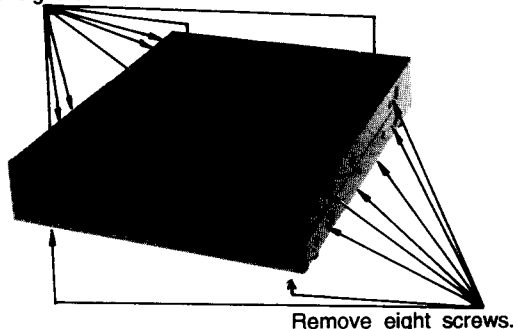
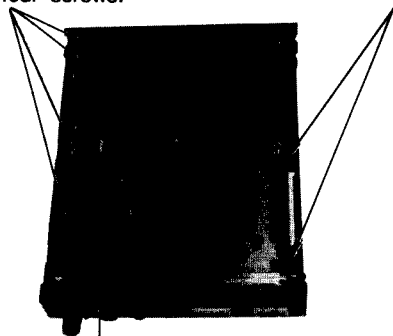


Fig. 2-2-1

- Referring to Fig. 2-2-2, remove five screws fixing the Power Board and disconnect three connectors from the Power Board, then remove the Power Board.
- Remove two screws fixing the Mounting Bracket and remove the Mounting Bracket.

Remove four screws.

Remove two screws.



Power Board Fig. 2-2-2

- Referring to Fig. 2-2-3, remove two screws fixing the Power Supply Unit and remove the Power Supply Unit.

Remove two screws.

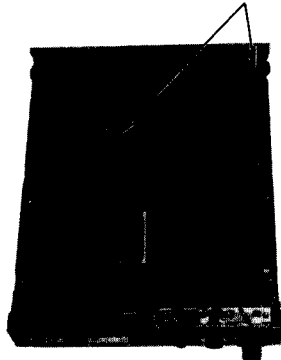


Fig. 2-2-3

- Referring to Fig. 2-2-4, turn the Mother Ass'y then pull the Modulator Board Ass'y and the Demodulator Board Ass'y out from the connectors on the Mother Board.
- Remove one screw and one plastic rivet fixing the Audio Board and pull the Audio Board Ass'y from the connector on the Audio Mother Board.

Remove one plastic rivet.

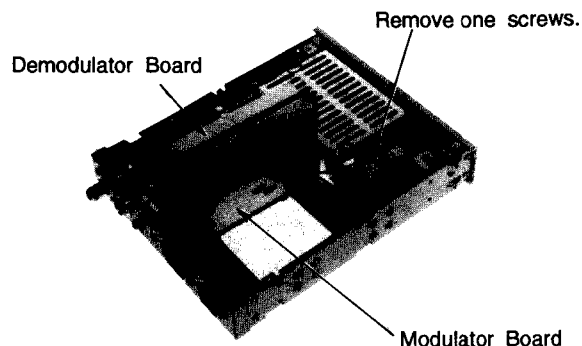


Fig. 2-2-4

## 3. Head Optical Ass'y Replacement

- Referring to Fig. 2-1-3, disconnect one Flexible Board from CN3 on the Drive Board and disconnect one Flexible Board from the CN10 on the Preamp /Encoder Board.
- Referring to Fig. 3-1, remove two screws and remove the Head Optical Ass'y.

Remove two screws.

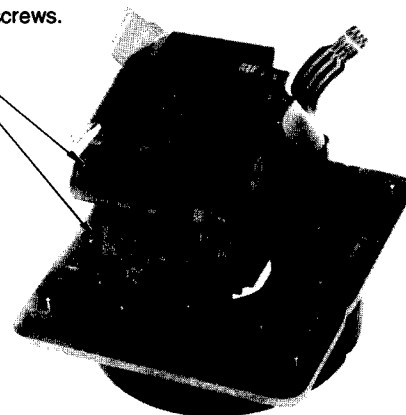


Fig. 3-1

## 4. Connection and Setting Up for Adjustment

### 4.1. Connection

The Fig. 4-1-1 shows the connecting diagram for adjustment of WV-E550E.

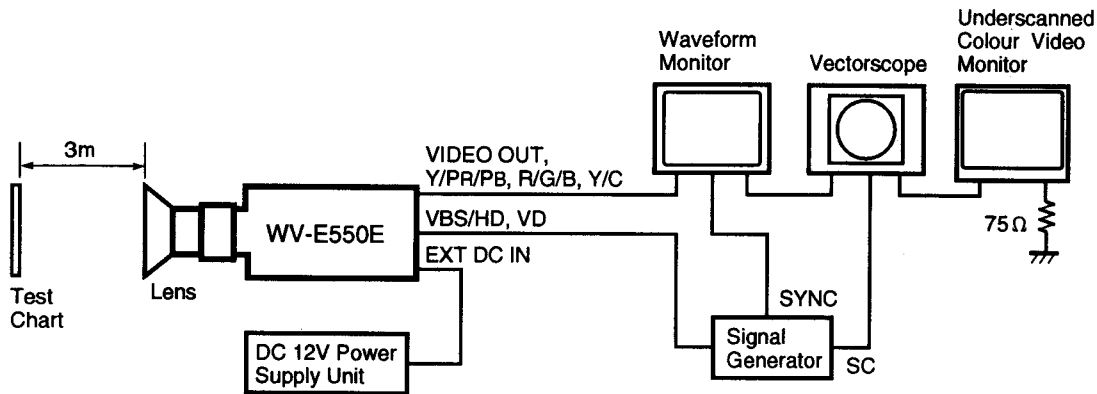


Fig. 4-1-1

- Connect the Underscanned Colour Video Monitor to the VIDEO OUT Connector on the Rear Panel of the WV-E550E through the Waveform Monitor and the Vectorscope using the coaxial cables.
- Terminate the input terminal of the Underscanned Colour Video Monitor with 75Ω.
- Connect the Signal Generator to the VBS/HD Connector on the Rear Panel using coaxial cable.
- Connect the 12V DC Power Supply Unit to the EXT DC IN Connector on the Rear Panel of the WV-E550E.
- Connect probe of the Oscilloscope, Frequency Counter and Digital Voltmeter to desired Test Point in each adjustment step.

The Fig. 4-1-2 shows the connecting diagram for adjustment of WV-PS550.

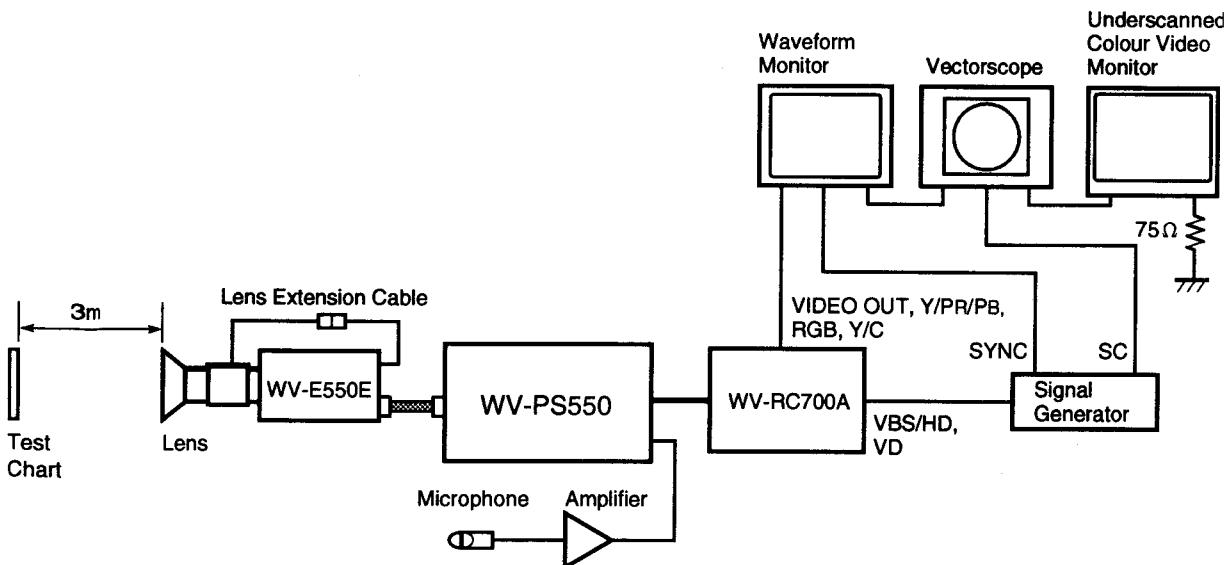


Fig. 4-1-2

- Connect the Underscanned Colour Video Monitor to the VIDEO OUT 1 Connector on the Rear Panel of the WV-RC700A through the Waveform Monitor and the Vectorscope using the coaxial cables.
- Terminate the input terminal of the Underscanned Colour Video Monitor with 75Ω.
- Connect the Signal Generator to the GENLOCK IN Connector on the Rear Panel of the WV-RC700A using the coaxial cable.

- Connect between the MPX Connector on the Rear Panel of the WV-RC700A and the MPX Connector on the Rear panel of the WV-PS550 using the N-Coaxial Cable, then Cable Select Switch on the Rear Panel of the WV-RC700A set to VP side.
- Connect between the Control Connector on the Rear Panel of the WV-E550E and the Camera Connector on the Rear Panel of the WV-PS550 using the 36-pin/28pin Camera Cable.
- Connect probe of the Oscilloscope, Frequency Counter and Digital Voltmeter to desired Test Point in each adjustment step.

## 4.2. Mode Setting for Adjustment

- The modes setting for adjustment should be set with the **PAGE**, **ITEM (AWC)**, **UP (ABC)** and **DOWN (BAR)** switches are mounted on the Rear Panel of the Camera.
- Press the **PAGE** switch more than 3 seconds, the Setup Menu as shown in Table 4-1 will be displayed.

** SETUP **	
GAIN	AGC HIGH
IRIS	AUTO
SHUTTER	OFF
WHITE BAL	ATW
DTL LEVEL	LOW
SCENE FILE	SCENE1
INIT	USER
END	

Table 4-1

- Select the item **GAIN** by the **ITEM** switch, then set to **0DB** by either the **UP** switch or **DOWN** switch.
- Select the item **IRIS** by the **ITEM** switch, then set to **MANU** by either the **UP** switch or **DOWN** switch.
- Select the item **DTL LEVEL** by the **ITEM** switch, then set to **OFF** by either the **UP** switch or **DOWN** switch.
- The menu as shown in Table 4-2 will be obtained.

** SETUP **	
GAIN	0DB
IRIS	MANU
SHUTTER	OFF
WHITE BAL	ATW
DTL LEVEL	OFF
SCENE FILE	USER A
INIT	USER
END	

Table 4-2

- Select the item **INIT** by the **ITEM** switch, then press the **PAGE** switch three times.

- Select the item **COLOUR BAR** by **ITEM** switch, then set to **2** by either the **UP** switch or **DOWN** switch so that the menu as shown in Table 4-3 will be displayed.

NO.3 ** INITIAL **	
SYNCHRO-SCAN	253/525
FLD/FRM	FIELD
GAMMA	ON
2D LPF	OFF
COLOR BAR	2
RET	END

Table 4-3

- Select the item **USER** by the **ITEM** switch, then press the **PAGE** switch so that the menu as shown in Table 4-4 will be displayed.

NO.1	USER A	* 0DB
(.35 - .45)	CURR	NEW
* GAMMA	.45	.45
* GAMMA	.45	.45
KNEE POINT	88%	88%
WHITE CLIP	110	110
* H. DTL LEVEL H	31	31
* V. DTL LEVEL H	31	31
* H. DTL LEVEL L	15	15
* V. DTL LEVEL L	15	15
RET	END	

Table 4-4

- Select the item **KNEE POINT** by the **ITEM** switch, then set to **98 %** by either the **UP** switch or **DOWN** switch.
- Select the item **END** by the **ITEM** switch, then press the **PAGE** switch.
- All adjustment steps should be done with this standard menu, unless otherwise specified.

## 4.3. Setting Up

Set the Standard Picture as follows:

- Mount the Auto Iris Lens on the Camera Head.
- Set the Logarithmic Gray Scale Chart.
- Incident light intensity of  $2,000 \pm 50$  lux on the Logarithmic Gray Scale Chart.
- Aim the Camera at the Logarithmic Gray Scale Chart.
- Set the Camera so that the Logarithmic Gray Scale Chart becomes full picture on the Underscanned Colour Video monitor.
- Connect the Oscilloscope to TP201(G IN) on the Preprocess Board.

- Turn the Lens Focus to obtain correct focal point.
- Set the Lens Iris so that the peak level of the gray scale from the blanking level becomes 300 mV as shown in Fig. 4-2.

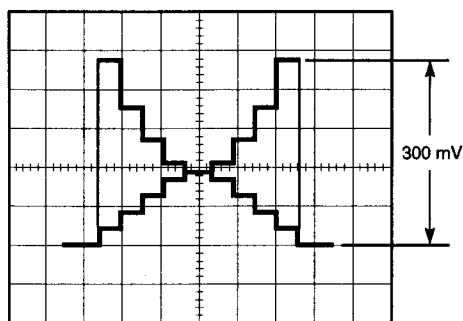


Fig. 4-2

- The adjustment should be done with this initial setting, unless otherwise specified.

## 5.1. Adjustment Procedure for WV-E550E

- Refer to the Location of the Test Points and Adjusting Controls on page 62.

- When adjusting the Power Board, use Extension Board (Part No. : YWV0EA0288AN) as shown in page 38.

### (1) 5.2V Adjustment

Test Point: TP2 (5.2V)

Power Board

Adjust: VR1 (5.2V)

Power Board

- Connect the Digital Voltmeter to TP2.
- Adjust VR1 to obtain  $5.2 \pm 0.05$  V DC.

### (2) Reset Phase Adjustment

Test Point: TP3 (FREQ)

Power Board

Adjust: VR2 (FREQ)

Power Board

- Connect the Digital Voltmeter to TP3.
- Trigger the Oscilloscope at the H rate.
- Adjust VR2 so that the phase of the Reset Pulse becomes 8T as shown in Fig. 5-1-1.

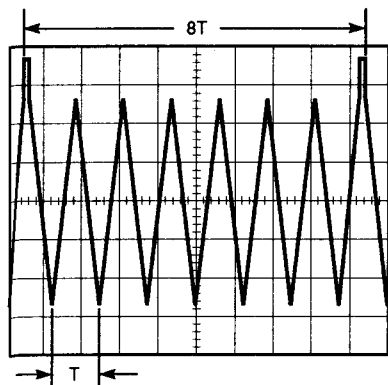


Fig. 5-1-1

- When adjusting the Drive Board, use Extension Board (Part No. : YWV0EA0287AN) and Flexible Cable (Part No. : YWV0EA0291AN) as shown in page 38.

### (3) Drive PLL Adjustment

Test point: TP7 (PD)

Drive Board

Adjust: L1 (28MHz VCO)

Drive Board

- Connect the Digital Voltmeter to TP7.
- Adjust L1 to obtain  $1.8 \pm 0.2$  V DC.

### (4) Vsub (CCD Bias) Adjustment

Test Point: TP4 (SUB-B)

Drive Board

TP5 (SUB-G)

Drive Board

TP6 (SUB-R)

Drive Board

Adjust: VR4 (SUB-B)

Drive Board

VR5 (SUB-G)

Drive Board

VR6 (SUB-R)

Drive Board

- Referring to Fig. 5-1-2, check each Vsub voltage on the Indication Label of the Head Optical Ass'y.
- Connect the Digital Voltmeter to TP4.
- Adjust VR4 to obtain Bch Vsub Voltage which indicated on the label.
- Change the Digital Voltmeter to TP5.
- Adjust VR5 to obtain Gch Vsub Voltage which indicated on the label.
- Change the Digital Voltmeter to TP6.
- Adjust VR6 to obtain Rch Vsub Voltage which indicated on the label.

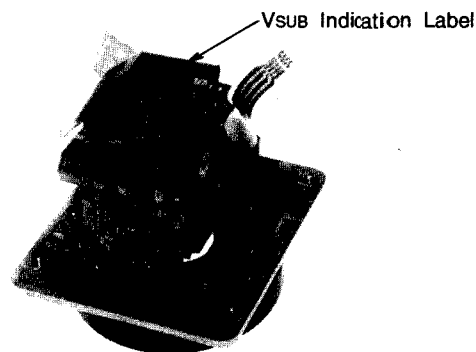


Fig. 5-1-2

### (5) Reset Gate Adjustment

Test Point: TP502 (R OUT)

Preamp/Encoder Board

TP602 (G OUT)

Preamp/Encoder Board

TP702 (B OUT)

Preamp/Encoder Board

TP401 (GND)

Preamp/Encoder Board

Adjust: VR1 (RG-R)

Drive Board

VR2 (RG-G)

Drive Board

VR3 (RG-B)

Drive Board

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Set the Lens iris fully open.

- Connect the Ground terminal of the Oscilloscope to TP401.
- Connect the Oscilloscope to TP502.
- Adjust VR1 so that the Preamp output signal becomes maximum.
- Change the Oscilloscope to TP602.
- Adjust VR2 so that the Preamp output signal becomes maximum.
- Change the Oscilloscope to TP702.
- Adjust VR3 so that the Preamp output signal becomes maximum.

■ When adjusting the Sync Board, use Extension Board (Part No. : YWV0EA0289AN) for Encoder Section, Extension Board (Part No. : YWV0EA0287AN) for Preamp Section and Flexible Cable (Part No. : YWV0EA0290AN) for Preamp section as shown in page 38.

#### (6) H-LOCK Frequency Adjustment

**Test point:** TP8 (SC)

**Sync Board**

**Adjust:** VR1 (H-LOCK)

**Sync Board**

- Connect the Frequency Counter to TP8.
- Adjust VR1 to obtain  $4.433618 \text{ MHz} \pm 10 \text{ Hz}$ .

#### (7) G/L Sync PLL Adjustment

**Test point:** TP5 (G/L VCO)

**Sync Board**

**Adjust:** L1 (G/L VCO)

**Sync Board**

- Supply the Black Burst Signal or Video signal to the VBS/HD Connector on the Rear Panel.
- Connect the Digital Voltmeter to TP5.
- Adjust L1 to obtain  $2.8 \pm 0.2 \text{ V DC}$ .

#### (8) Clock Pulse Phase Adjustment

**Test point:** TP6 (8FSC)

**Digital Process Board**

TP5 (4FSC)

**Digital Process Board**

TP2 (8FSC-2)

**Digital Process Board**

TP4 (4FSC-2)

**Digital Process Board**

TP8 (GND)

**Digital Process Board**

**Adjust:** CT2 (8FSC-2 PHASE)

**Digital Process Board**

CT1 (4FSC PHASE)

**Digital Process Board**

CT3 (4FSC-2 PHASE)

**Digital Process Board**

- Connect CH1 of the Oscilloscope to TP6.
- Connect CH2 of the Oscilloscope to TP5.
- Connect the Ground terminal of the Oscilloscope to TP8.
- Adjust CT2 to obtain  $5 \pm 1 \text{ nsec}$  as shown in Fig. 5-1-3.

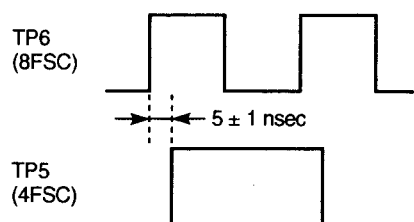


Fig. 5-1-3

- Change CH1 of the Oscilloscope to TP5.
- Change CH2 of the Oscilloscope to TP2.
- Adjust CT1 to obtain  $4 \pm 1 \text{ nsec}$  as shown in Fig. 5-1-4.

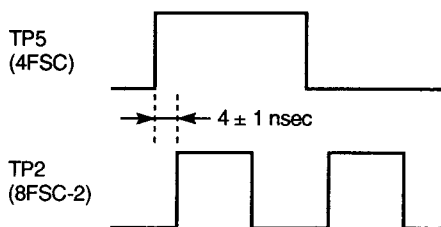


Fig. 5-1-4

- Change CH1 of the Oscilloscope to TP2.
- Change CH2 of the Oscilloscope to TP4.
- Adjust CT3 to obtain  $4 \pm 1 \text{ nsec}$  as shown in Fig. 5-1-5.

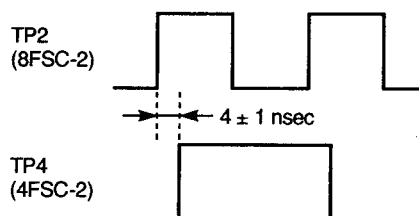


Fig. 5-1-5

#### (9) Character Position Adjustment

**Test point:** VIDEO OUT CONNECTOR

**Rear Panel**

**Adjust:** CT1 (CHARACTER)

**System Control Board**

- Press the **DOWN (BAR)** switch more than 3 seconds so that the Colour Bar 2 mode is selected.
- Press the **PAGE** switch on the Rear Panel more than 3 seconds.
- Adjust CT1 so that the left edge of the **U** character of the **SHUTTER** word becomes a divider line of the White and Yellow of the Colour Bar as shown in Fig. 5-1-6.



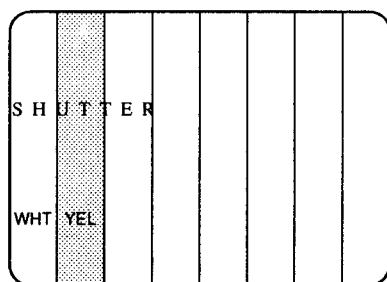


Fig. 5-1-6

- When adjusting the Preamp/Encoder Board, use Extension Board (Part No. : YWV0EA0289AN) for Encoder Section, Extension Board (Part No. : YWV0EA0287AN) for Preamp Section and Flexible Cable (Part No. : YWV0EA0290AN) for Preamp section as shown in page 38.

### (10) Colour Bar Adjustment

- Press the **DOWN (BAR)** switch more than 3 seconds so that the Colour Bar 2 mode is selected.

#### (10)-1 Y/C Mode (OUTPUT SEL2) Adjustment

Test Point: Pin 6 of CN6 (Y) Rear Panel

Adjust: VR3 (Y) Preamp/Encoder Board  
VR1 (SYNC) Preamp/Encoder Board

- Connect the terminated Oscilloscope with  $75\ \Omega$  to the Pin 6 of the VIDEO/RGB Connector.
- Open the page 5 of the Initial Menus by the **PAGE** switch.
- Select the item **OUTPUT SEL2** by the **ITEM** switch, then set the **Y/C** mode by either **UP** switch or **DOWN** switch, the menu as shown in Table 5-1-1 will be displayed.

NO.5 ** INITIAL **	
OUTPUT SEL1	Y/C
OUTPUT SEL2	Y/C
SYNC SEL	0.3V
CAMERA ID	OFF
TIME DATE	OFF
RET END	

Table 5-1-1

- Adjust VR3 so that the Y Level becomes  $700 \pm 14\text{ mV}$  as shown in Fig. 5-1-7.
- Adjust VR1 so that the Sync Level becomes  $300 \pm 14\text{ mV}$  as shown in Fig. 5-1-7.

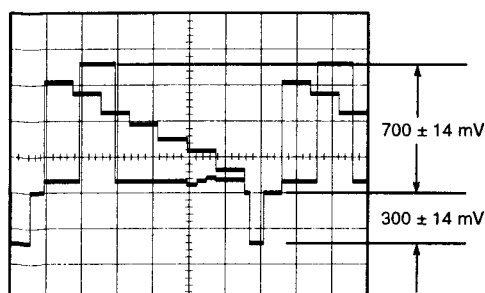


Fig. 5-1-7

#### (10)-2 ENC Mode (OUTPUT SEL2) Adjustment

Test Point: Pin 6 of VIDEO/RGB Connector

Rear Panel

Adjust: VR4 (COMP Y) Preamp/Encoder Board

- Connect the terminated Oscilloscope with  $75\ \Omega$  to the Pin 6 of the VIDEO/RGB Connector.
- Open the page 5 of the Initial Menus by the **PAGE** switch.
- Select the item **OUTPUT SEL2** by the **ITEM** switch, then set the **ENC** mode by either the **UP** switch or **DOWN** switch, the menu as shown in Table 5-1-2 will be displayed.

NO.5 ** INITIAL **	
OUTPUT SEL1	Y/C
OUTPUT SEL2	ENC
SYNC SEL	0.3V
CAMERA ID	OFF
TIME DATE	OFF
RET END	

Table 5-1-2

- Adjust VR4 so that the COMP Y Level becomes  $700 \pm 14\text{ mV}$  as shown in Fig. 5-1-8.

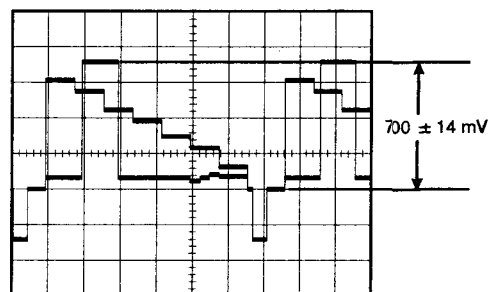


Fig. 5-1-8

#### (10)-3 Composite Mode (OUTPUT SEL2) Adjustment

Test Point: VIDEO OUT CONNECTOR Rear Panel  
Pin 6 of VIDEO/RGB Connector

Rear Panel

Adjust: VR5 (C GAIN) Preamp/Encoder Board  
VR6 (R-Y GAIN) Preamp/Encoder Board  
VR7 (CAR BAL B) Preamp/Encoder Board  
VR8 (CAR BAL R) Preamp/Encoder Board  
CT1 (PHASE) Preamp/Encoder Board  
VR14 (BURST LEVEL) Preamp/Encoder Board

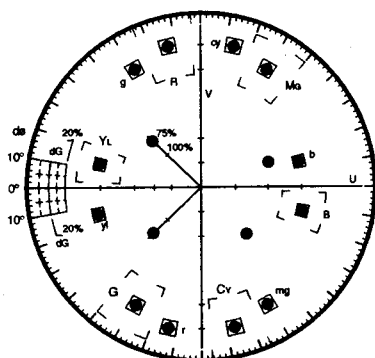
VR24 (W-CLIP) Preamp/Encoder Board

- Open the page 5 of the Initial Menus by the **PAGE** switch.
- Select the item **OUTPUT SEL2** by the **ITEM** switch, then set the **COMPOSITE** mode by either the **UP** switch or **DOWN** switch, the menu as shown in Table 5-1-3 will be displayed.

NO.5 ** INITIAL **	
OUTPUT SEL1	Y/C
OUTPUT SEL2	COMPOSITE
SYNC SEL	0.3V
CAMERA ID	OFF
TIME DATE	OFF
RET END	

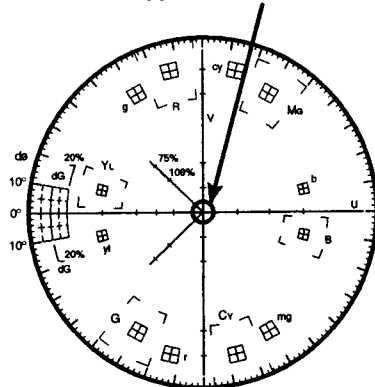
**Table 5-1-3**

- Adjust VR5 so that the each chroma vector positions at their correct positions on the Vectorscope as shown in Fig. 5-1-9.
- Adjust VR6 so that the each chroma vector positions at their correct positions on the Vectorscope as shown in Fig. 5-1-9.

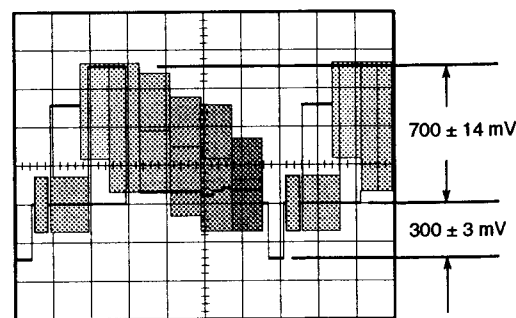

**Fig. 5-1-9**

- Set the Gain Control of the Vectorscope to maximum.
- Adjust VR7 so that the vector positions at center of the Vectorscope as shown in Fig. 5-1-10.
- Adjust VR8 so that the vector positions at center of the Vectorscope as shown in Fig. 5-1-10.

Positions at Center.


**Fig. 5-1-10**

- Adjust CT1 so that the each chroma vector positions at their correct positions on the Vectorscope as shown in Fig. 5-1-9.
- Adjust VR14 so that the Burst Level becomes  $300 \pm 7$  mVp-p as shown in Fig. 5-1-11.


**Fig. 5-1-11**

- Confirm that the Burst Level becomes 100 % on the Vectorscope.
- Connect the terminated Oscilloscope with 75  $\Omega$  to the Pin 6 of CN6.
- Adjust VR24 so that the White Clip Level becomes 112 %.

#### (10)-4 Burst Phase Adjustment

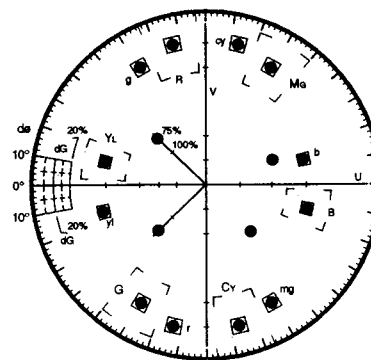
Test Point: VIDEO OUT CONNECTOR

Rear Panel

Adjust: VR18 (BURST PHASE)

Preamp/Encoder Board

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Adjust VR18 so that the Burst Phase becomes correct position of the Vectorscope as shown in Fig. 5-1-12.


**Fig. 5-1-12**

### (10)-5 Y/Pr/Pb Mode (OUTPUT SEL1) Adjustment

Test Point: Pin 4 of VIDEO/RGB Connector

Pin 3 of VIDEO/RGB Connector Rear Panel  
Pin 5 of VIDEO/RGB Connector Rear Panel

Adjust: VR10 (Y) Preamp/Encoder Board  
VR2 (Y-SYNC) Preamp/Encoder Board  
VR12 (Pr) Preamp/Encoder Board  
VR13 (Pb) Preamp/Encoder Board  
VR25 (W-CLIP) Preamp/Encoder Board

- Connect the terminated Oscilloscope with 75  $\Omega$  to the Pin 4 of the VIDEO/RGB Connector.
- Open the page 5 of the Initial Menus by the **PAGE** switch.
- Select the item **OUTPUT SEL1** by the **ITEM** switch, then set the **Y/Pr/Pb** mode by either the **UP** switch or **DOWN** switch, the menu as shown in Table 5-1-4 will be displayed.

NO.5 ** INITIAL **	
OUTPUT SEL1	Y/Pr/Pb
OUTPUT SEL2	COMPOSITE
SYNC SEL	0.3V
CAMERA ID	OFF
TIME DATE	OFF
RET END	

Table 5-1-4

- Preadjust VR25 so that the Y Level does not clip.
- Adjust VR10 so that the Y Level becomes  $700 \pm 14$  mV as shown in Fig. 5-1-13.
- Adjust VR2 so that the Sync Level becomes  $300 \pm 14$  mV as shown in Fig. 5-1-13.

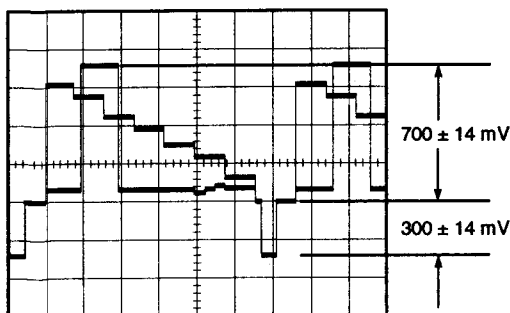


Fig. 5-1-13

- Change the terminated Oscilloscope with 75  $\Omega$  to the Pin 3 of the VIDEO/RGB Connector.
- Adjust VR12 so that the Pr Level becomes  $700 \pm 14$  mV as shown in Fig. 5-1-14.

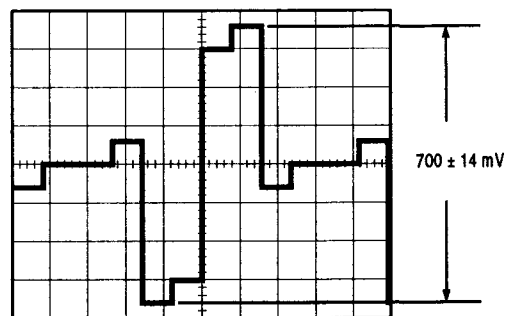


Fig. 5-1-14

- Change the terminated Oscilloscope with 75  $\Omega$  to the Pin 5 of the VIDEO/RGB Connector.
- Adjust VR13 so that the Pb Level becomes  $700 \pm 14$  mV as shown in Fig. 5-1-15.

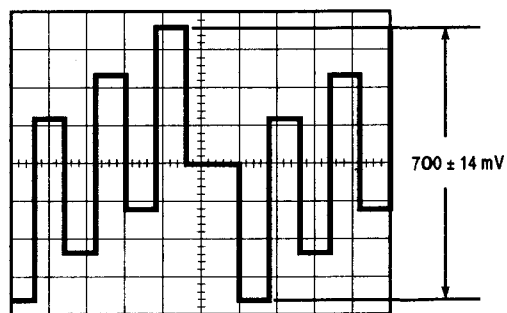


Fig. 5-1-15

- Change the terminated Oscilloscope with 75  $\Omega$  to the Pin 4 of the VIDEO/RGB Connector.
- Adjust VR25 so that the Y Level becomes  $800 \pm 14$  mV.

### (10)-6 Y/C Mode (OUTPUT SEL1) Adjustment

Test Point: Pin 4 of VIDEO/RGB Connector

Pin 3 of VIDEO/RGB Connector Rear Panel

Adjust: VR3 (Y) Preamp/Encoder Board  
VR9 (C/BURST) Preamp/Encoder Board

- Connect the terminated Oscilloscope with 75  $\Omega$  to the Pin 4 of the VIDEO/RGB Connector.
- Open the page 5 of the Initial Menus by the **PAGE** switch.
- Select the item **OUTPUT SEL1** by the **ITEM** switch, then set the **Y/C** mode by either the **UP** switch or **DOWN** switch, the menu as shown in Table 5-1-5 will be displayed.

```

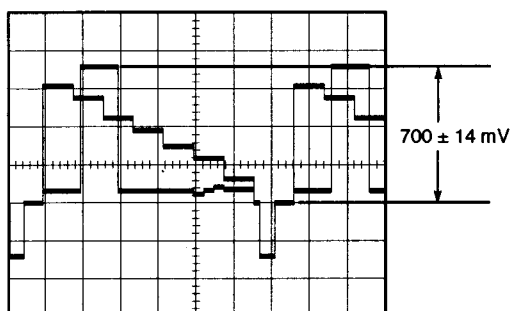
NO.5  ** INITIAL **
OUTPUT SEL1  Y/C
OUTPUT SEL2  COMPOSITE
SYNC SEL     0.3V
CAMERA ID    OFF
TIME DATE    OFF

RET  END

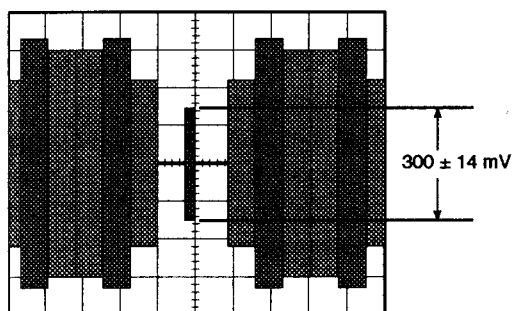
```

**Table 5-1-5**

- Confirm that the Y Level becomes  $700 \pm 14$  mV.  
If not readjust VR3 so that the Y Level becomes  $700 \pm 14$  mV as shown in Fig. 5-1-16.


**Fig. 5-1-16**

- Change the terminated Oscilloscope with  $75 \Omega$  to the Pin 3 of the VIDEO/RGB Connector.
- Adjust VR9 so that the Burst Level becomes  $300 \pm 14$  mV as shown in Fig. 5-1-17.


**Fig. 5-1-17**

#### (10)-7 R/G/B Mode (OUTPUT SEL1) Adjustment

Test Point: Pin 4 (G) of VIDEO/RGB Connector

Rear Panel

Pin 3 (R) of VIDEO/RGB Connector

Rear Panel

Pin 5 (B) of VIDEO/RGB Connector

Rear Panel

Adjust: VR21 (G GAIN) Preamp/Encoder Board  
 VR22 (R GAIN) Preamp/Encoder Board  
 VR23 (B GAIN) Preamp/Encoder Board

- Connect the terminated Oscilloscope with  $75 \Omega$  to the Pin 4 of the VIDEO/RGB Connector.
- Open the page 5 of the Initial Menu by the **PAGE** switch.
- Select the item **OUTPUT SEL1** by the **ITEM** switch, then set the **R/G/B** mode by either the **UP** switch or **DOWN** switch, the menu as shown in Table 5-1-6 will be displayed.

```

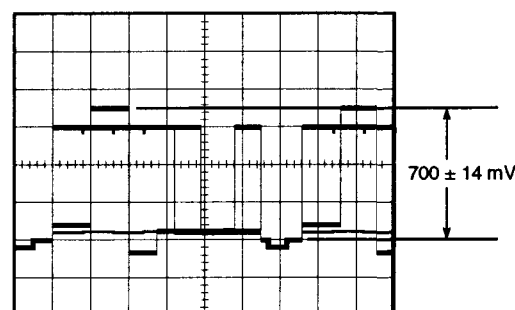
NO.5  ** INITIAL **
OUTPUT SEL1  R/G/B
OUTPUT SEL2  COMPOSITE
SYNC SEL     0.3V
CAMERA ID    OFF
TIME DATE    OFF

RET  END

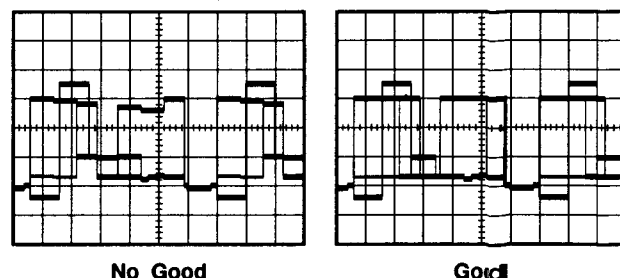
```

**Table 5-1-6**

- Adjust VR21 so that the white portion of the Video signal level becomes  $700 \pm 14$  mV as shown in Fig. 5-1-18.


**Fig. 5-1-18**

- Change the terminated Oscilloscope with  $75 \Omega$  to the Pin 3 of the VIDEO/RGB Connector.
- Adjust VR22 so that the Video signal level becomes flat level as shown in Fig. 5-1-19.


**Fig. 5-1-19**

- Change the terminated Oscilloscope with  $75 \Omega$  to the Pin 5 of the VIDEO/RGB Connector.
- Adjust VR23 so that the Video signal level becomes flat level as shown in Fig. 5-1-20.

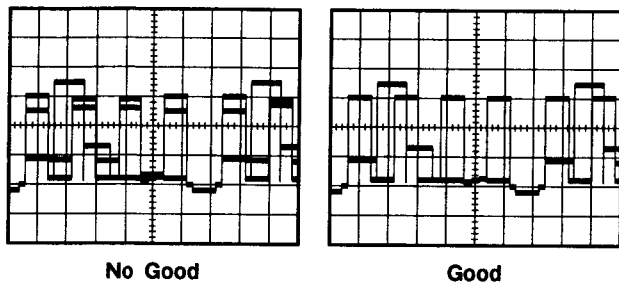


Fig. 5-1-20

- Before start to adjust following steps, press the **DOWN (BAR)** switch more than 3 seconds so that the Camera mode is selected.

#### (11) Preamp DC Offset Adjustment

<b>Test Point:</b>	<b>TP502 (R OUT)</b>	<b>Preamp/Encoder Board</b>
	<b>TP602 (G OUT)</b>	<b>Preamp/Encoder Board</b>
	<b>TP702 (B OUT)</b>	<b>Preamp/Encoder Board</b>
	<b>TP401 (GND)</b>	<b>Preamp/Encoder Board</b>
<b>Adjust:</b>	<b>VR501 (R DC)</b>	<b>Preamp/Encoder Board</b>
	<b>VR601 (G DC)</b>	<b>Preamp/Encoder Board</b>
	<b>VR701 (B DC)</b>	<b>Preamp/Encoder Board</b>

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Set the Lens Iris to F8.
- Connect the Ground terminal of the Oscilloscope to TP401.
- Connect the Oscilloscope to TP502.
- Adjust VR501 so that the Black portion of the Video signal becomes 0 V DC (Ground level) as show in Fig. 5-1-21.
- Connect the Ground terminal of the Oscilloscope to TP602.
- Adjust VR601 so that the Black portion of the Video signal becomes 0 V DC (Ground level) as show in Fig. 5-1-21.
- Connect the Ground terminal of the Oscilloscope to TP702.
- Adjust VR701 so that the Black portion of the Video signal becomes 0 V DC (Ground level) as show in Fig. 5-1-21.

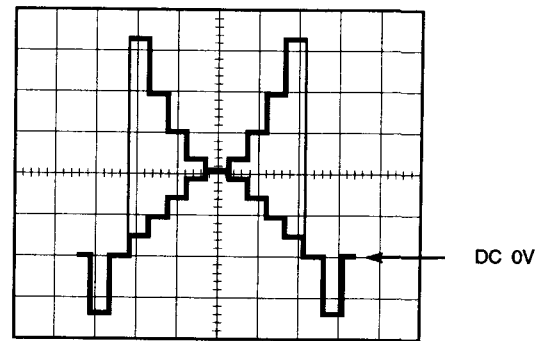


Fig. 5-1-21

#### (12) Preamp Frequency Response Adjustment

<b>Test Point:</b>	<b>TP502 (R OUT)</b>	<b>Preamp/Encoder Board</b>
	<b>TP602 (G OUT)</b>	<b>Preamp/Encoder Board</b>
	<b>TP702 (B OUT)</b>	<b>Preamp/Encoder Board</b>
	<b>TP401 (GND)</b>	<b>Preamp/Encoder Board</b>
<b>Adjust:</b>	<b>CT501 (R FREQ)</b>	<b>Preamp/Encoder Board</b>
	<b>CT601 (G FREQ)</b>	<b>Preamp/Encoder Board</b>
	<b>CT701 (B FREQ)</b>	<b>Preamp/Encoder Board</b>

- Aim the Camera at the In-Mega Chart.
- Connect the Ground terminal of the Oscilloscope to TP401.
- Connect the Oscilloscope to TP602.
- Set the Lens Iris so that the Video signal level at TP602 becomes 300 mV as shown in Fig. 5-1-22.
- Adjust CT601 so that each response becomes flat level and the 3 MHz signal level becomes 80 % against 0.5 MHz response as 100 % as shown in Fig. 5-1-22.
- Change the Oscilloscope to TP502.
- Adjust CT501 so that each response becomes flat level and the 3 MHz signal level becomes 80 % against 0.5 MHz response as 100 % as shown in Fig. 5-1-22.
- Change the Oscilloscope to TP702.
- Adjust CT701 so that each response becomes flat level and the 3 MHz signal level becomes 80 % against 0.5 MHz response as 100 % as shown in Fig. 5-1-22.

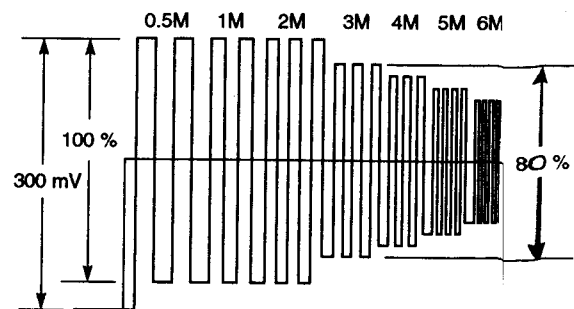


Fig. 5-1-22

- Before start to adjust following steps, short between TP3 and TP4 on the System Control Board to clear the AWC/ABC data.

### (13) Input Gain Adjustment

<b>Test Point:</b>	<b>TP201 (G IN)</b>	<b>Preprocess Board</b>
	<b>TP102 (R GAIN-1)</b>	<b>Preprocess Board</b>
	<b>TP202 (G GAIN-1)</b>	<b>Preprocess Board</b>
	<b>TP302 (B GAIN-1)</b>	<b>Preprocess Board</b>
<b>Adjust:</b>	<b>VR101 (R GAIN-1)</b>	<b>Preprocess Board</b>
	<b>VR201 (G GAIN-1)</b>	<b>Preprocess Board</b>
	<b>VR301 (B GAIN-1)</b>	<b>Preprocess Board</b>

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to TP201.
- Set the Lens Iris so that the Video signal level becomes 300 mV as shown in Fig. 5-1-23.

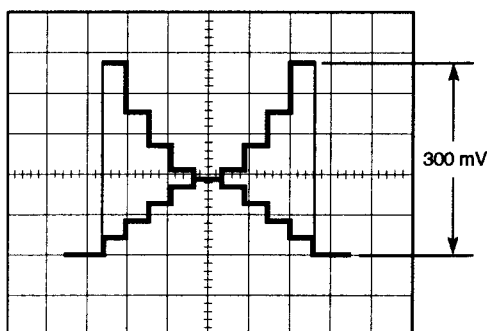


Fig. 5-1-23

- Change the Oscilloscope to TP102.
- Adjust VR101 so that the Video signal level becomes  $700 \pm 10$  mV as shown in Fig. 5-1-24.
- Change the Oscilloscope to TP202.
- Adjust VR201 so that the Video signal level becomes  $700 \pm 10$  mV as shown in Fig. 5-1-24.
- Change the Oscilloscope to TP302.
- Adjust VR301 so that the Video signal level becomes  $700 \pm 10$  mV as shown in Fig. 5-1-24.

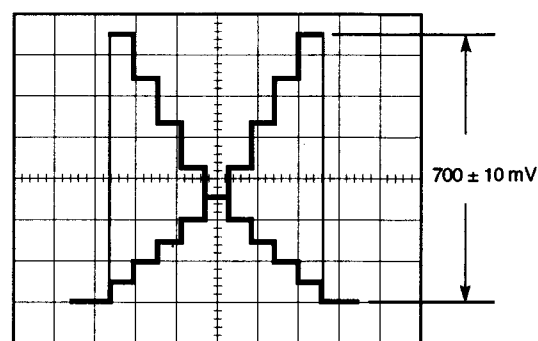


Fig. 5-1-24

### (14) Pedestal Adjustment

<b>Test Point:</b>	<b>VIDEO OUT CONNECTOR</b>	<b>Rear Panel</b>
<b>Adjust:</b>	<b>VR106 (R PED)</b>	<b>Preprocess Board</b>
	<b>VR206 (G PED)</b>	<b>Preprocess Board</b>
	<b>VR306 (B PED)</b>	<b>Preprocess Board</b>

- Cap on the Lens.
- Adjust VR106 so that the Pedestal level becomes 10 % and the carrier becomes minimum as shown in Fig. 5-1-25.
- Adjust VR206 so that the Pedestal level becomes 10 % and the carrier becomes minimum as shown in Fig. 5-1-25.
- Adjust VR306 so that the Pedestal level becomes 10 % and the carrier becomes minimum as shown in Fig. 5-1-25.
- Repeat above steps until the Pedestal level becomes 10 % and the carrier becomes minimum.

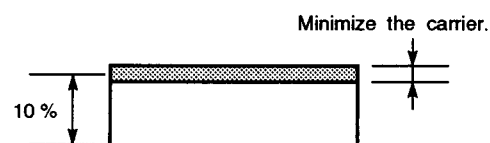


Fig. 5-1-25

### (15) 0dB Gain Coarse Adjustment

<b>Test Point:</b>	<b>TP201 (G IN)</b>	<b>Preprocess Board</b>
	<b>TP103 (R GAIN-2)</b>	<b>Preprocess Board</b>
	<b>TP203 (G GAIN-2)</b>	<b>Preprocess Board</b>
	<b>TP303 (B GAIN-2)</b>	<b>Preprocess Board</b>
<b>Adjust:</b>	<b>VR104 (R GAIN-2)</b>	<b>Preprocess Board</b>
	<b>VR204 (G GAIN-2)</b>	<b>Preprocess Board</b>
	<b>VR304 (B GAIN-2)</b>	<b>Preprocess Board</b>

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to TP201.
- Set the Lens Iris so that the Video signal level becomes 300 mV as shown in Fig. 5-1-26.

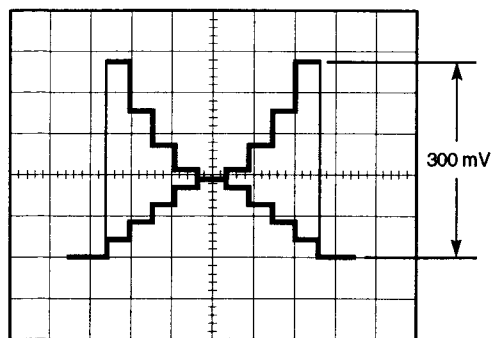


Fig. 5-1-26

- Change the Oscilloscope to TP103.
- Adjust VR104 so that the Video signal level becomes  $700 \pm 10$  mV as shown in Fig. 5-1-27.
- Change the Oscilloscope to TP203.
- Adjust VR204 so that the Video signal level becomes  $700 \pm 10$  mV as shown in Fig. 5-1-27.
- Change the Oscilloscope to TP303.
- Adjust VR304 so that the Video signal level becomes  $700 \pm 10$  mV as shown in Fig. 5-1-27.

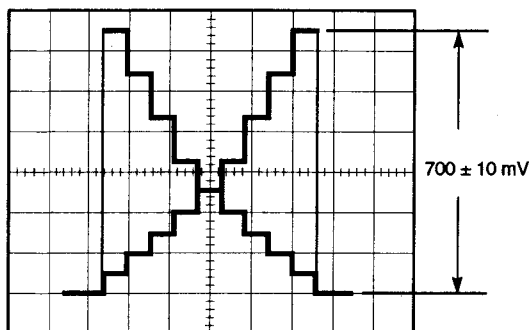


Fig. 5-1-27

## (16) Gamma Adjustment

<b>Test Point:</b>	TP201 (G IN)	Preprocess Board
	TP106 (R GAMMA)	Preprocess Board
	TP206 (G GAMMA)	Preprocess Board
	TP306 (B GAMMA)	Preprocess Board
<b>Adjust:</b>	VR110 (R GAMMA MIN)	Preprocess Board
	VR108 (R GAMMA MAX)	Preprocess Board
	VR109 (R CROSS)	Preprocess Board
	VR107 (R KNEE)	Preprocess Board
	VR210 (G GAMMA MIN)	Preprocess Board
	VR208 (G GAMMA MAX)	Preprocess Board
	VR209 (G CROSS)	Preprocess Board
	VR207 (G KNEE)	Preprocess Board
	VR310 (B GAMMA MIN)	Preprocess Board
	VR308 (B GAMMA MAX)	Preprocess Board
	VR309 (B CROSS)	Preprocess Board
	VR307 (B KNEE)	Preprocess Board

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to TP201.
- Set the Lens Iris so that the Video signal level becomes 300 mV as shown in Fig. 5-1-28.

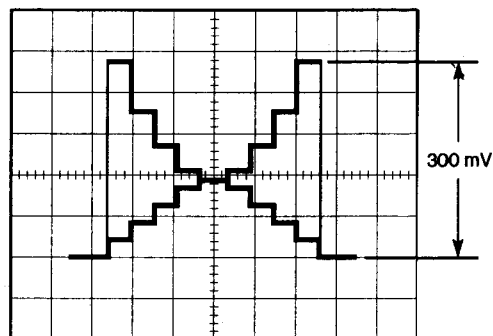


Fig. 5-1-28

- Set VR107, VR207 and VR307 so that Knee does not effect.
- Set VR109, VR209 and VR309 to minimum ( $\gamma = 1$ ).
- Change the Oscilloscope to TP106.
- Adjust VR110 so that the Video signal level becomes  $1.44 \text{ V} \pm 10 \text{ mV}$  as shown in Fig. 5-1-29.
- Change the Oscilloscope to TP206.
- Adjust VR210 so that the Video signal level becomes  $1.44 \text{ V} \pm 10 \text{ mV}$  as shown in Fig. 5-1-29.
- Change the Oscilloscope to TP306.
- Adjust VR310 so that the Video signal level becomes  $1.44 \text{ V} \pm 10 \text{ mV}$  as shown in Fig. 5-1-29.

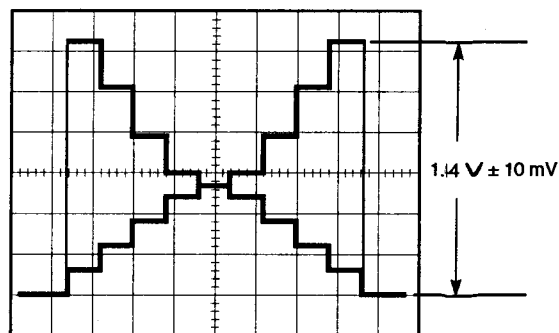


Fig. 5-1-29

- Set VR109, VR209 and VR309 to maximum ( $\gamma = 0.4$ ).
- Change the Oscilloscope to TP106.
- Adjust VR108 so that the Video signal level becomes  $1.44 \text{ V} \pm 10 \text{ mV}$  as shown in Fig. 5-1-30.
- Change the Oscilloscope to TP206.
- Adjust VR208 so that the Video signal level becomes  $1.44 \text{ V} \pm 10 \text{ mV}$  as shown in Fig. 5-1-30.
- Change the Oscilloscope to TP306.
- Adjust VR308 so that the Video signal level becomes  $1.44 \text{ V} \pm 10 \text{ mV}$  as shown in Fig. 5-1-30.

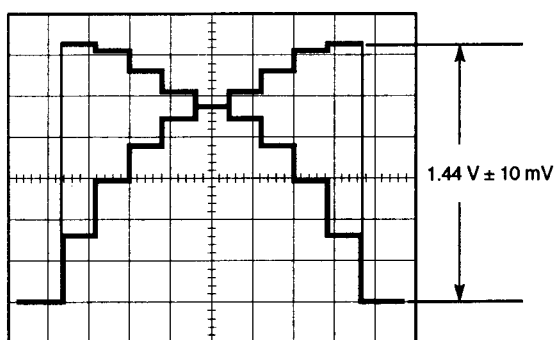


Fig. 5-1-30

- Repeat adjust between  $\gamma = 1$  and  $\gamma = 0.4$  so that the Video signal level does not changed.

### (17) Pedestal Coarse Adjustment

**Test Point:** VIDEO OUT CONNECTOR Rear Panel

**Adjust:** VR106 (R PED) Preprocess Board  
 VR206 (G PED) Preprocess Board  
 VR306 (B PED) Preprocess Board

- Cap on the Lens.
- Adjust VR106 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-31.
- Adjust VR206 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-31.
- Adjust VR306 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-31.

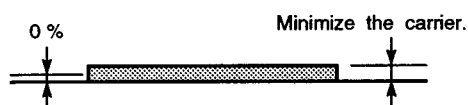


Fig. 5-1-31

### (18) Cross Point Adjustment

**Test Point:** VIDEO OUT CONNECTOR Rear Panel

**Adjust:** VR109 (R CROSS) Preprocess Board  
 VR209 (G CROSS) Preprocess Board  
 VR309 (B CROSS) Preprocess Board

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Adjust VR109 so that the Cross Point level of the Gray Scale becomes  $57 \pm 2 \%$  and the carrier becomes minimum as shown in Fig. 5-1-32.
- Adjust VR209 so that the Cross Point level of the Gray Scale becomes  $57 \pm 2 \%$  and the carrier becomes minimum as shown in Fig. 5-1-32.
- Adjust VR309 so that the Cross Point level of the Gray Scale becomes  $57 \pm 2 \%$  and the carrier becomes minimum as shown in Fig. 5-1-32.

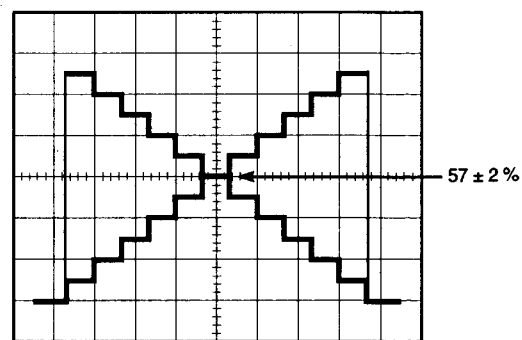


Fig. 5-1-32

### (19) Pulse Cancel and Pedestal Adjustment

**Test Point:** VIDEO OUT CONNECTOR Rear Panel

**Adjust:** VR103 (R PULSE CANCEL)

Preprocess Board  
 VR106 (R PED) Preprocess Board  
 VR203 (G PULSE CANCEL) Preprocess Board  
 VR206 (G PED) Preprocess Board  
 VR303 (B PULSE CANCEL) Preprocess Board  
 VR306 (B PED) Preprocess Board

- Press the **PAGE** switch more than 3 seconds, then set the **GAIN** to **18dB**.
- Cap on the Lens.
- Adjust VR103 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-33.
- Adjust VR203 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-33.
- Adjust VR303 so that the Pedestal level becomes 7.5 % and the carrier becomes minimum as shown in Fig. 5-1-33.
- Set the **GAIN** to **0dB**.
- Adjust VR106 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-33.
- Adjust VR206 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-33.
- Adjust VR306 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-33.

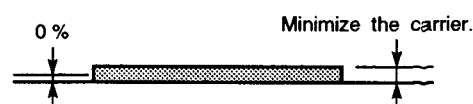


Fig. 5-1-33

- Repeat adjust between the **0dB** Gain and **18dB** Gain so that the Pedestal level does not change.



## (20) Shutter Pulse Cancel Coarse Adjustment

Test Point: VIDEO OUT CONNECTOR Rear Panel

Adjust: VR102 (R SHUTTER) Preprocess Board  
VR202 (G SHUTTER) Preprocess Board  
VR302 (B SHUTTER) Preprocess Board

- Press the **PAGE** switch more than 3 seconds, then set the **GAIN** to 18dB and the **SHUTTER** to 1/100, the menu as shown in Table 5-1-7 will be displayed.

** SETUP **	
GAIN	18DB
IRIS	MANU
SHUTTER	1/100
WHITE BAL	ATW
DTL LEVEL	OFF
SCENE FILE	USER A
INIT	USER
END	

Table 5-1-7

- Cap on the Lens.
- Adjust VR102 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-34.
- Adjust VR202 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-34.
- Adjust VR302 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-34.

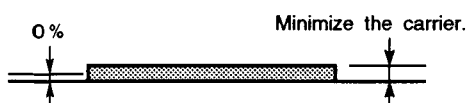


Fig. 5-1-34

- Repeat adjust between the 0dB Gain and 18dB Gain so that the Pedestal level does not change.

## (21) Input Gain Fine Adjustment

Test Point: TP201 (G IN) Preprocess Board  
TP102 (R GAIN-1) Preprocess Board  
TP202 (G GAIN-1) Preprocess Board  
TP302 (B GAIN-1) Preprocess Board

Adjust: VR101 (R GAIN-1) Preprocess Board  
VR201 (G GAIN-1) Preprocess Board  
VR301 (B GAIN-1) Preprocess Board

- Press the **PAGE** switch more than 3 seconds, then set the **GAIN** to 0dB.
- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to TP201.
- Set the Lens Iris so that the Video signal level becomes 300 mV as shown in Fig. 5-1-35.

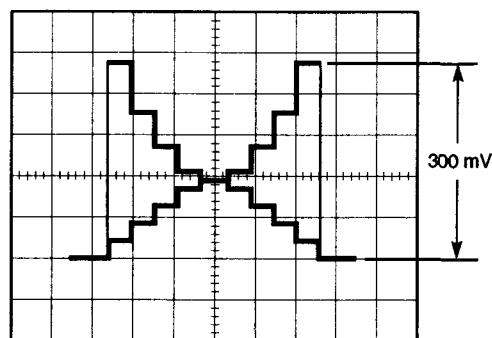


Fig. 5-1-35

- Change the Oscilloscope to TP102.
- Adjust VR101 so that the Video signal level becomes  $700 \pm 10$  mV as shown in Fig. 5-1-36.
- Change the Oscilloscope to TP202.
- Adjust VR201 so that the Video signal level becomes  $700 \pm 10$  mV as shown in Fig. 5-1-36.
- Change the Oscilloscope to TP302.
- Adjust VR301 so that the Video signal level becomes  $700 \pm 10$  mV as shown in Fig. 5-1-36.

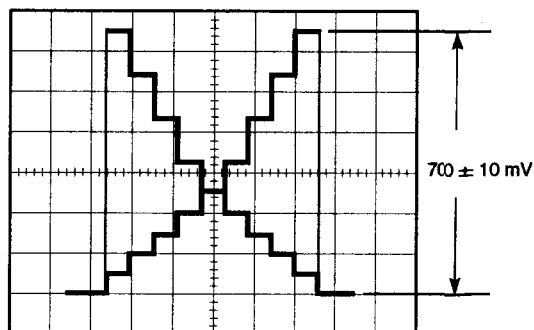


Fig. 5-1-36

## (22) Superposition Shading Adjustment

- Press the **PAGE** switch more than 3 seconds then set the **GAIN** to 18dB.
- Cap on the Lens.

### (22)-1 H Top Shading Adjustment

Test Point: TP106 (R GAMMA) Preprocess Board  
TP206 (G GAMMA) Preprocess Board  
TP306 (B GAMMA) Preprocess Board

Adjust: VR1 (H TOP SHADING) Preprocess Board  
VR5 (R H TOP SHADING) Preprocess Board  
VR9 (G H TOP SHADING) Preprocess Board  
VR13 (B H TOP SHADING) Preprocess Board

- Connect the Oscilloscope to TP206 and triggered at H rate.

- Adjust VR9 so that the shading portion level becomes flat level as shown in Fig. 5-1-37.
- Adjust VR1 so that the H Top portion becomes flat level.
- Change the Oscilloscope to TP106 and triggered at H rate.
- Adjust VR5 so that the shading portion level becomes flat level as shown in Fig. 5-1-37.
- Change the Oscilloscope to TP306 and triggered at H rate.
- Adjust VR13 so that the shading portion level becomes flat level as shown in Fig. 5-1-37.

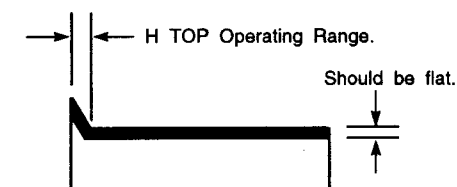


Fig. 5-1-37

- Set VR1 becomes minimum position of the effective range of the resistance.

**Note:** Do not set non-resistance area of VR1.

#### (22)-2 V Top Shading Adjustment

**Test Point:** TP106 (R GAMMA) Preprocess Board  
TP206 (G GAMMA) Preprocess Board  
TP306 (B GAMMA) Preprocess Board

**Adjust:** VR2 (V TOP SHADING) Preprocess Board  
VR6 (R V TOP SHADING) Preprocess Board  
VR10 (G V TOP SHADING) Preprocess Board  
VR14 (B V TOP SHADING) Preprocess Board

- Connect the Oscilloscope to TP206 and triggered at V rate.
- Adjust VR10 so that the shading portion level becomes flat level as shown in Fig. 5-1-38.
- Adjust VR2 so that the V Top portion becomes flat level.
- Change the Oscilloscope to TP106 and triggered at V rate.
- Adjust VR6 so that the shading portion level becomes flat level as shown in Fig. 5-1-38.
- Change the Oscilloscope to TP306 and triggered at V rate.
- Adjust VR14 so that the shading portion level becomes flat level as shown in Fig. 5-1-38.

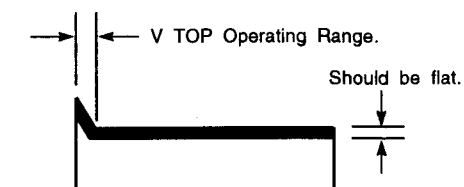


Fig. 5-1-38

- Set VR2 becomes minimum position of the effective range of the resistance.

**Note:** Do not set non-resistance area of VR2.

#### (22)-3 H Shading (SAW) Adjustment

**Test Point:** TP106 (R GAMMA) Preprocess Board  
TP206 (G GAMMA) Preprocess Board  
TP306 (B GAMMA) Preprocess Board

**Adjust:** VR3 (R H SHADING (SAW)) Preprocess Board  
VR7 (G H SHADING (SAW)) Preprocess Board  
VR11 (B H SHADING (SAW)) Preprocess Board

- Connect the Oscilloscope to TP106 and triggered at H rate.
- Adjust VR3 so that the shading portion level becomes flat level as shown in Fig. 5-1-39.
- Change the Oscilloscope to TP206 and triggered at H rate.
- Adjust VR7 so that the shading portion level becomes flat level as shown in Fig. 5-1-39.
- Change the Oscilloscope to TP306 and triggered at H rate.
- Adjust VR11 so that the shading portion level becomes flat level as shown in Fig. 5-1-39.

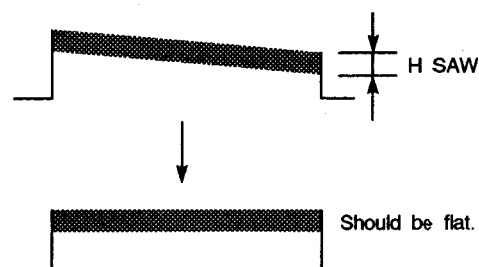


Fig. 5-1-39

#### (22)-4 V Shading (SAW) Adjustment

**Test Point:** TP106 (R GAMMA) Preprocess Board  
TP206 (G GAMMA) Preprocess Board  
TP306 (B GAMMA) Preprocess Board

**Adjust:** VR4 (R V SHADING (SAW)) Preprocess Board  
VR8 (G V SHADING (SAW)) Preprocess Board  
VR12 (B V SHADING (SAW)) Preprocess Board

- Connect the Oscilloscope to TP106 and triggered at V rate.
- Adjust VR4 so that the shading portion level becomes flat level as shown in Fig. 5-1-40.
- Change the Oscilloscope to TP206 and triggered at V rate.
- Adjust VR8 so that the shading portion level becomes flat level as shown in Fig. 5-1-40.
- Change the Oscilloscope to TP306 and triggered at V rate.
- Adjust VR12 so that the shading portion level becomes flat level as shown in Fig. 5-1-40.

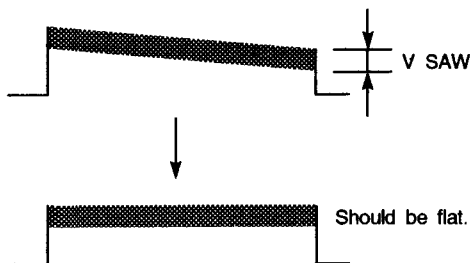


Fig. 5-1-40

#### (23) Pedestal Fine Adjustment

**Test Point:** VIDEO OUT CONNECTOR Rear Panel

**Adjust:** VR103 (R PULSE CANCEL) Preprocess Board  
VR106 (R PED) Preprocess Board  
VR203 (G PULSE CANCEL) Preprocess Board  
VR206 (G PED) Preprocess Board  
VR303 (B PULSE CANCEL) Preprocess Board  
VR306 (B PED) Preprocess Board

- Press the **PAGE** switch more than 3 seconds, then set the **GAIN** to 0dB.
- Cap on the Lens.
- Adjust VR106 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-41.

- Adjust VR206 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-41.
- Adjust VR306 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-41.
- Set the **GAIN** to 18dB.
- Adjust VR103 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-41.
- Adjust VR203 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-41.
- Adjust VR303 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-41.



Fig. 5-1-41

- Repeat adjust between the 0dB Gain and 18dB Gain so that the Pedestal level does not change.

#### (24) Shutter Pulse Cancel Fine Adjustment

**Test Point:** VIDEO OUT CONNECTOR Rear Panel

**Adjust:** VR102 (R SHUTTER) Preprocess Board  
VR202 (G SHUTTER) Preprocess Board  
VR302 (B SHUTTER) Preprocess Board

- Press the **PAGE** switch more than 3 seconds, then set the **GAIN** to 18dB and the **SHUTTER** to 1/100
- Cap on the Lens.
- Adjust VR102 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-42.
- Adjust VR202 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-42.
- Adjust VR302 so that the Pedestal level becomes 0 % and the carrier becomes minimum as shown in Fig. 5-1-42.

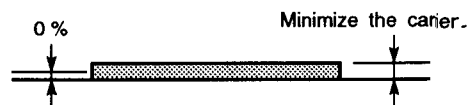


Fig. 5-1-42

- Repeat adjust between the 0dB Gain and 18dB Gain so that the Pedestal level does not change.
- After adjustment, set the **GAIN** to 0dB and the **SHUTTER** to OFF.

## (25) 0dB/18dB Gain Adjustment

<b>Test Point:</b>	<b>TP201 (G IN)</b>	<b>Preprocess Board</b>
	<b>TP103 (R GAIN-2)</b>	<b>Preprocess Board</b>
	<b>TP203 (G GAIN-2)</b>	<b>Preprocess Board</b>
	<b>TP303 (B GAIN-2)</b>	<b>Preprocess Board</b>
<b>Adjust:</b>	<b>VR104 (R GAIN-2)</b>	<b>Preprocess Board</b>
	<b>VR105 (R 18dB GAIN)</b>	<b>Preprocess Board</b>
	<b>VR204 (G GAIN-2)</b>	<b>Preprocess Board</b>
	<b>VR205 (G 18dB GAIN)</b>	<b>Preprocess Board</b>
	<b>VR304 (B GAIN-2)</b>	<b>Preprocess Board</b>
	<b>VR305 (B 18dB GAIN)</b>	<b>Preprocess Board</b>

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to TP201.
- Set the Lens Iris so that the Video signal level becomes 300 mV as shown in Fig. 5-1-43.

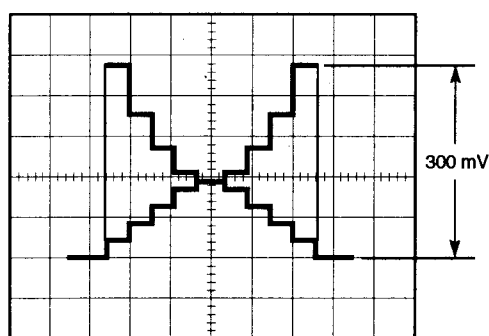


Fig. 5-1-43

- Press the **PAGE** switch more than 3 seconds, then set the **GAIN** to **0dB**.
- Change the Oscilloscope to TP203.
- Confirm that the Video signal level becomes  $700 \pm 10$  mV as shown in Fig. 5-1-44.  
If not, readjust VR204.
- Change the Oscilloscope to TP103.
- Confirm that the Video signal level becomes  $700 \pm 10$  mV as shown in Fig. 5-1-44.  
If not, readjust VR104.
- Change the Oscilloscope to TP303.
- Confirm that the Video signal level becomes  $700 \pm 10$  mV as shown in Fig. 5-1-44.  
If not, readjust VR304.
- Mount the ND-8 Filter on the Lens.
- Change the Oscilloscope to TP203.
- Set the **GAIN** to **18dB**.
- Adjust VR205 so that the Video signal level becomes  $700 \pm 10$  mV as shown in Fig. 5-1-44.
- Remove the ND-8 Filter.
- Confirm that the Video signal becomes  $700 \pm 10$  mV as shown in Fig. 5-1-44.  
If not readjust VR204.

- Repeat adjustment between **0dB** Gain and **18dB** Gain until satisfactory.
- Set the **GAIN** to **18dB**.
- Change the Oscilloscope to TP203.
- Set the Lens Iris so that the Video signal level becomes  $700 \pm 10$  mV as shown in Fig. 5-1-44.
- Change the Oscilloscope to TP103.
- Confirm that the Video signal becomes  $700 \pm 10$  mV as shown in Fig. 5-1-44.  
If not readjust VR105.
- Repeat adjustment between **0dB** Gain and **18dB** Gain until satisfactory.
- Change the Oscilloscope to TP303.
- Confirm that the Video signal becomes  $700 \pm 10$  mV, if not readjust VR305.
- Repeat adjust between **0dB** Gain and **18dB** Gain until satisfactory.

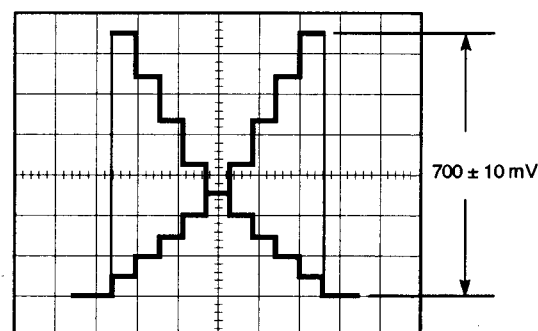


Fig. 5-1-44

## (26) White Balance Adjustment

<b>Test Point:</b>	<b>VIDEO OUT CONNECTOR</b>	<b>Rear Panel</b>
<b>Adjust:</b>	<b>VR111 (2000°K WB)</b>	<b>Preprocess Board</b>
	<b>VR311 (10000°K WB)</b>	<b>Preprocess Board</b>

- Press the **UP (ABC)** switch on the Rear Panel.
- Set the Colour Temperature of the Lighting to 3,200 °K.
- Press the **ITEM (AWC)** switch.
- Set the Gain Control of the Vectorscope to maximum.
- Confirm that the vector positions at the center of the Vectorscope.
- Change the Colour Temperature of the Lighting to 2,000 °K.
- Press the **ITEM (AWC)** switch.
- Adjust VR111 so that the vector positions at the center of the Vectorscope as shown in Fig. 5-1-45.
- Change the Colour Temperature of the Lighting to 10,000 °K.
- Press the **ITEM (AWC)** switch.
- Adjust VR311 so that the vector positions at the center of the Vectorscope as shown in Fig. 5-1-45.

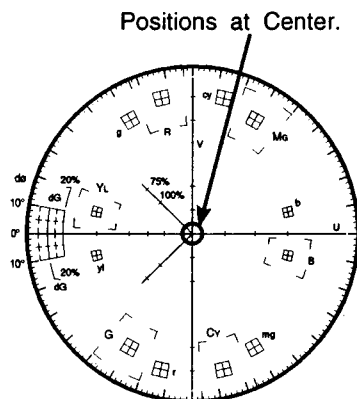


Fig. 5-1-45

### (27) Knee Adjustment

<b>Test Point:</b>	<b>VIDEO OUT CONNECTOR</b>	<b>Rear panel</b>
	<b>TP203 (G GAIN-2)</b>	<b>Preprocess Board</b>
<b>Adjust:</b>	<b>VR107 (R KNEE)</b>	<b>Preprocess Board</b>
	<b>VR207 (G KNEE)</b>	<b>Preprocess Board</b>
	<b>VR307 (B KNEE)</b>	<b>Preprocess Board</b>

- Set the Colour Temperature of the Lighting to 3,200 °K.
- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to TP203.
- Set the Lens Iris so that the Video signal level becomes 100 %.
- Press the **PAGE** switch more than 3 seconds, then set the **GAIN** to **0dB**.
- Set the **GAIN** to **9dB**.
- Set the Gain Control of the Vectorscope to maximum.
- Adjust VR107 so that the vector positions at the center of the Vectorscope as shown in Fig. 5-1-46.
- Adjust VR207 so that the vector positions at the center of the Vectorscope as shown in Fig. 5-1-46.
- Adjust VR307 so that the vector positions at the center of the Vectorscope as shown in Fig. 5-1-46.

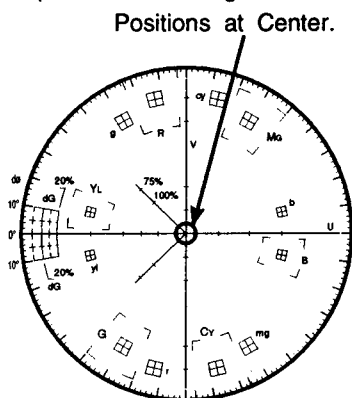


Fig. 5-1-46

- Set the **GAIN** to **0DB**.
- Open the Lens Iris one click (1F step).
- Confirm that the vector positions at the center of the Vectorscope.

## 5.2. Adjustment Procedure for WV-PS550

Refer to the Location of the Test Points and Adjusting Controls on page 62.

### (1) 89.0V Adjustment

<b>Test Point:</b>	<b>TP1 (89.0V)</b>	<b>Power Board</b>
<b>Adjustment:</b>	<b>VR1 (89.0V)</b>	<b>Power Board</b>

- Connect the Digital Voltmeter to TP1 .
- Adjust VR1 to obtain  $89.0 \pm 0.1V$ .

- When adjusting the Modulator Board, use Extension Board (Part No. : YWV0EA0158AN) as shown in page 39.

### (2) Video Gain 1 Adjustment

<b>Test Point:</b>	<b>TP1 (VIDEO)</b>	<b>Modulator Board</b>
<b>Adjust:</b>	<b>VR1 (VIDEO GAIN)</b>	<b>Modulator Board</b>

- Connect the Oscilloscope to TP1.
- Trigger the Oscilloscope at H rate.
- Adjust VR1 so that the Video signal level becomes  $0.8 \pm 0.01 V_{p-p}$  as shown in the Fig. 5-2-1.

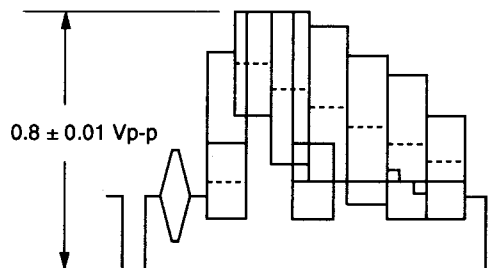


Fig. 5-2-1

### (3) Video Gain 2 Adjustment

<b>Test Point:</b>	<b>TP10 (MPX)</b>	<b>Modulator Board</b>
<b>Adjust:</b>	<b>VR2 (MPX GAIN)</b>	<b>Modulator Board</b>

- Connect the Oscilloscope to TP10.
- Trigger the Oscilloscope at H rate.
- Adjust VR2 so that the Video signal level becomes  $3.0 \pm 0.05 V_{p-p}$  as shown in the Fig. 5-2-2.

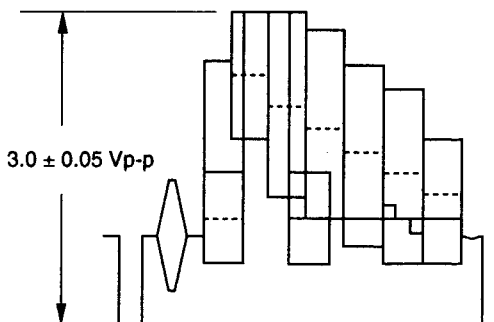


Fig. 5-2-2

#### (4) Command Modulation Adjustment

Test Point: TP10 (MPX) Modulator Board  
Adjust: VR5 (COMMAND CARRIER-1) Modulator Board  
VR6 (COMMAND CARRIER-2) Modulator Board

- Connect the Oscilloscope to TP10.
- Trigger the Oscilloscope at V rate.
- Set VR5 to its mechanical center position and VR3 to fully clockwise.
- Adjust VR6 so that the carrier on the signal becomes minimum as shown in the Fig. 5-2-3.

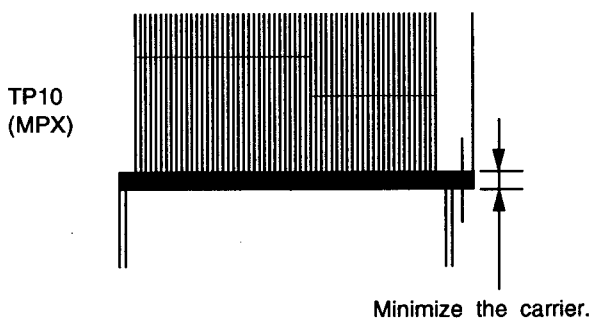


Fig. 5-2-3

#### (5) Command Level Adjustment

Test Point: TP10 (MPX) Modulator Board  
Adjust: VR3 (COMMAND LEVEL) Modulator Board

- Connect the Oscilloscope to TP10.
- Trigger the Oscilloscope at V rate.
- Adjust VR3 so that the carrier on the Command signal becomes  $0.5 \pm 0.01$  Vp-p as shown in the Fig. 5-2-4.

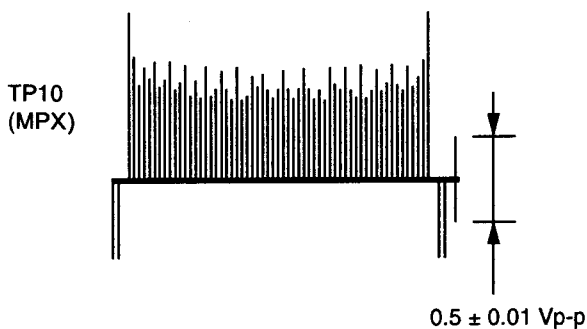


Fig. 5-2-4

#### (6) AGC Pulse Adjustment

Test Point: TP3 (V-SYNC) Modulator Board  
TP4 (AGC PULSE) Modulator Board  
Adjust: VR4 (AGC PULSE PHASE) Modulator Board  
VR11 (AGC PULSE WIDTH) Modulator Board

- Connect CH1 of the Oscilloscope to TP3 and CH2 of the Oscilloscope to TP4, and set dual display mode.
- Trigger the Oscilloscope at V rate.
- Expand the AGC Pulse period on the Oscilloscope.
- Adjust VR4 so that the AGC Pulse Phase becomes  $200 \pm 5$   $\mu$ sec. as shown in the Fig. 5-2-5.
- Adjust VR11 so that the AGC Pulse Width becomes  $100 \pm 5$   $\mu$ sec. as shown in the Fig. 5-2-5.

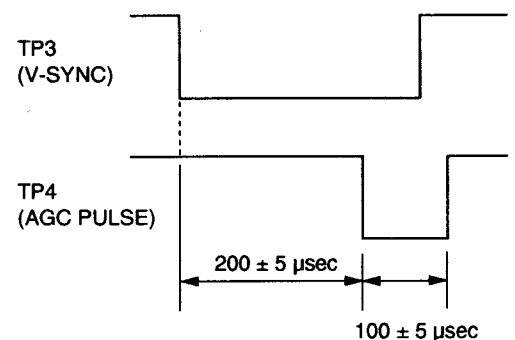


Fig. 5-2-5

#### (7) AGC Cancel Adjustment

Test Point: TP3 (V-SYNC) Modulator Board  
TP5 (AGC CANCEL) Modulator Board  
Adjust: VR7 (AGC CANCEL) Modulator Board

- Connect CH1 of the Oscilloscope to TP3 and CH2 of the Oscilloscope to TP5, and set dual display mode.
- Trigger the Oscilloscope at V rate.
- Expand the AGC Cancel signal period on the Oscilloscope.
- Adjust VR7 so that the AGC Cancel signal phase becomes  $340 \pm 5$   $\mu$ sec. as shown in the Fig. 5-2-6.

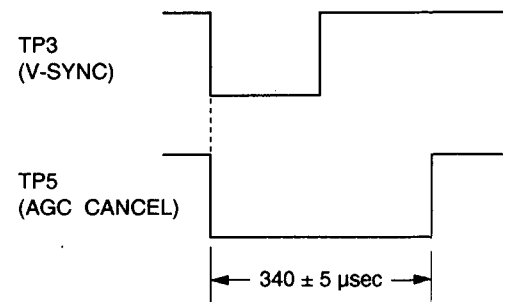


Fig. 5-2-6

### (8) Data Cancel Pulse Adjustment

**Test Point:** TP3 (V-SYNC) Modulator Board  
TP6 (DATA CANCEL) Modulator Board  
**Adjust:** VR8 (DATA CANCEL) Modulator Board

- Connect two probes of the Oscilloscope to TP3 and TP6, and set dual display mode.
- Trigger the Oscilloscope at V rate.
- Expand the Data Cancel Pulse period on the Oscilloscope.
- Adjust VR8 so that the Data Cancel Pulse Phase becomes  $100 \pm 5 \mu\text{sec}$ , as shown in the Fig. 5-2-7.

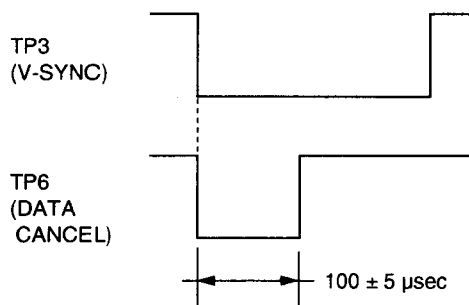


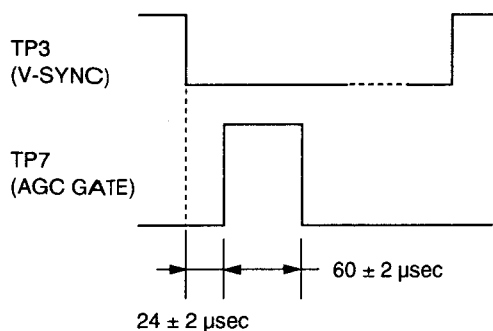
Fig. 5-2-7

### (9) AGC Gate Pulse Adjustment

**Test Point:** TP3 (V-SYNC) Modulator Board  
TP7 (AGC GATE) Modulator Board  
**Adjust:** VR9 (AGC GATE PHASE) Modulator Board  
VR10 (AGC PULSE) Modulator Board

- Connect two probes of the Oscilloscope to TP3 and TP7, and set dual display mode.
- Trigger the Oscilloscope at V rate.
- Expand the AGC Gate period on the Oscilloscope.
- Adjust VR9 so that the AGC Gate Pulse Phase becomes  $24 \pm 2 \mu\text{sec}$ , as shown in the Fig. 5-2-8.
- Adjust VR10 so that the AGC Gate Pulse Width becomes  $60 \pm 2 \mu\text{sec}$ , as shown in the Fig. 5-2-8.

Fig. 5-2-8



### (10) Confirmation of 17 MHz Carrier Level

**Test Point:** TP8 (17MHz) Modulator Board

- Connect the Oscilloscope to TP8.
- Confirm that the 17MHz Carrier level becomes 800 mV p-p as shown in the Fig. 5-2-9.

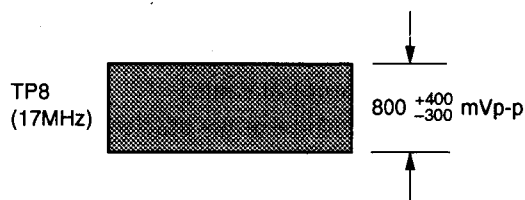


Fig. 5-2-9

- When adjusting the Demodulator Board, use Extension Board (Part No. : YWV0EA0158AN) as shown in page 39.

### (11) Command AGC Pulse Adjustment

**Test Point:** TP5 (COMMAND AGC) Demodulator Board  
**Adjust:** VR4 (COMMAND LEVEL) Demodulator Board

- Connect the Oscilloscope to TP5.
- Adjust VR4 so that the Command level of the first AGC signal becomes  $0.45 \pm 0.01 \text{ Vp-p}$  as shown in the Fig. 4-2-10.

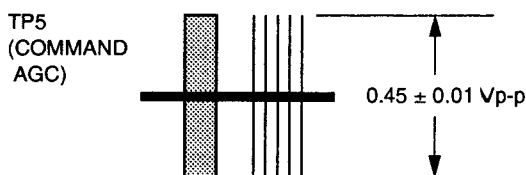


Fig. 4-2-10

### (12) Confirmation of Command AGC DC Level

**Test Point:** TP6 (COMMAND AGC DC) Demodulator Board

- Connect the Oscilloscope to TP6.
- Set the Oscilloscope to DC mode.
- Confirm that the DC level of the Command AGC DC signal becomes less than 2.5 V DC as shown in the Fig. 4-2-11.

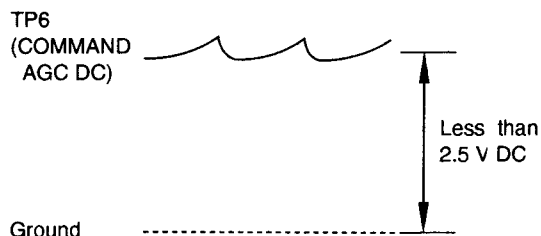


Fig. 4-2-11

### 13) G/L AGC Level Adjustment

**Test Point:** TP2 (G/L AGC) **Demodulator Board**  
**Adjust:** VR1 (G/L LEVEL) **Demodulator Board**

- Supply the Black Burst signal or Colour Bar signal to the Gen-Lock Input Connector of the WV-RC700A.
- Connect the Oscilloscope to TP2.
- Adjust VR1 so that the Command level of the Gen-Lock signal becomes  $0.41 \pm 0.01$  Vp-p as shown in the Fig. 4-2-12.

Fig. 4-2-12



### (14) Confirmation of G/L AGC DC Level

**Test Point:** TP3 (G/L AGC DC) **Demodulator Board**

- Connect the Oscilloscope to TP3.
- Set the Oscilloscope to DC mode.
- Confirm that the DC level of the G/L AGC signal becomes less than 3.0 V DC as shown in the Fig. 4-2-13.

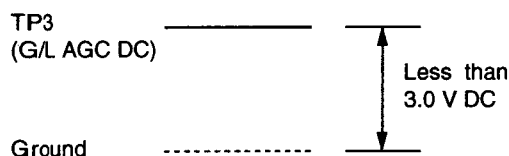


Fig. 4-2-13

### (15) G/L Sync Level Adjustment

**Test Point:** Pin 22 (GEN-LOCK OUT) **Extension Board**  
**Adjust:** VR2 (G/L SYNC LEVEL) **Demodulator Board**

- Supply the Black Burst signal or Colour Bar signal to the Gen-Lock Input Connector of the WV-RC700A.
- Connect the Oscilloscope to Pin 22 on the Extension Board.
- Adjust VR2 so that the Sync level of the Gen-Lock signal becomes  $0.5 \pm 0.02$  Vp-p as shown in the Fig. 4-2-14.

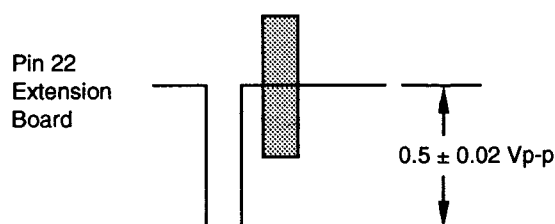


Fig. 4-2-14

### (16) G/L Burst Level Adjustment

**Test Point:** Pin 22 (GEN-LOCK OUT) **Extension Board**  
**Adjust:** CT1 (G/L DOM) **Demodulator Board**  
 VR3 (G/L BURST LEVEL) **Demodulator Board**

- Supply the Black Burst signal or Colour Bar signal to the Gen-Lock Input Connector of the WV-RC700A.
- Connect the Oscilloscope to Pin 22 on the Extension Board.
- Adjust CT1 so that the Burst level of the Gen-Lock signal becomes maximum.
- Adjust VR3 so that the Burst level of the Gen-Lock signal becomes  $0.5 \pm 0.02$  Vp-p as shown in the Fig. 4-2-15.

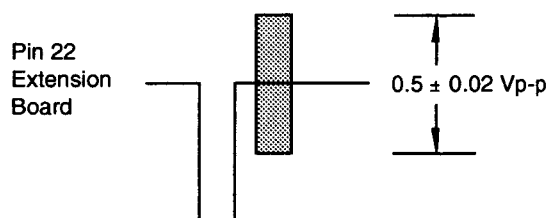


Fig. 4-2-15

- Before start to adjust the Audio Board, two switches on the Audio board are as follows:

SW1: Audio position  
 SW2: ON position

### (17) 11.2MHz Adjustment

**Test Point:** TP2 (11.2MHz) **Audio Board**  
**Adjust:** L2 (11.2MHz) **Audio Board**

- Connect the Oscilloscope to TP2.
- Adjust L2 so that the carrier level becomes maximum.
- Connect the Frequency Counter to TP2.
- Adjust L2 so that the carrier frequency becomes  $11.202 \pm 0.001$  MHz.



### (18) Modulator DC Level Adjustment

**Test Point:** TP3 (5.0V) **Audio Board**

**Adjust:** L3 (5.0V) **Audio Board**

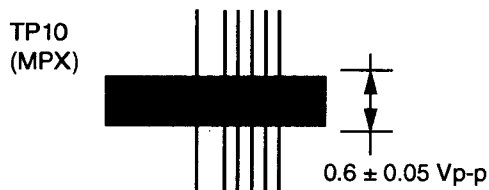
- Connect the Digital Voltmeter to TP3.
- Adjust L3 to obtain  $5.0 \pm 0.1$  V.

### (19) Intercom MPX Carrier Adjustment

**Test Point:** TP10 (MPX) **Modulator Board**

**Adjust:** VR1 (MPX CARRIER) **Audio Board**

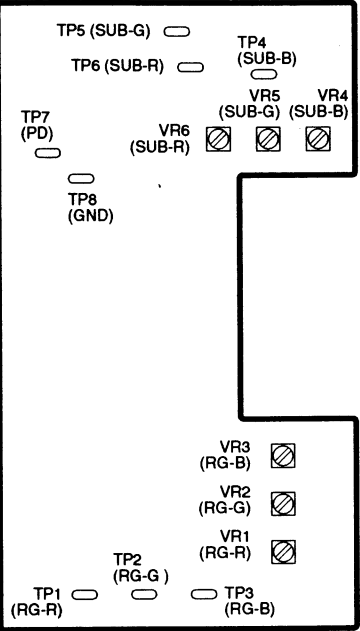
- Set SW2 on the Audio Board to ON.
- Connect the Oscilloscope to TP10 on the Modulator Board.
- Adjust VR1 so that the carrier level becomes  $0.6 \pm 0.05$  Vp-p as shown in the Fig. 4-2-16.



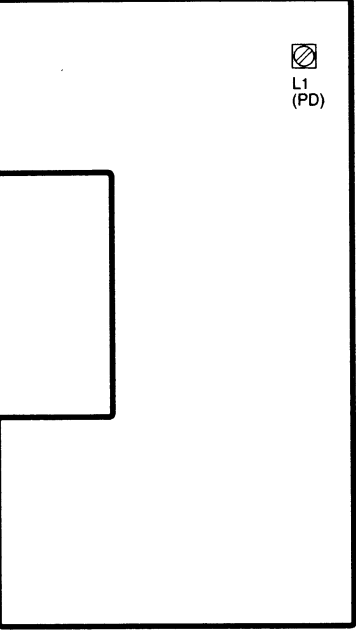
**Fig. 4-2-16**

# LOCATION OF TEST POINTS AND ADJUSTING CONTROLS (WV-E550E)

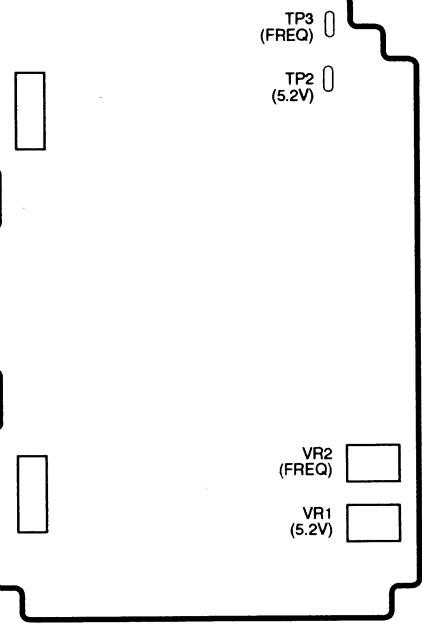
**DRIVE BOARD  
(PATTERN SIDE)**



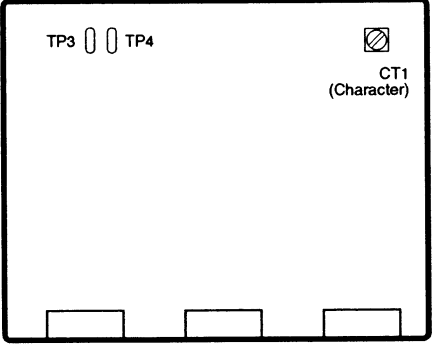
**DRIVE BOARD  
(COMPONENT SIDE)**



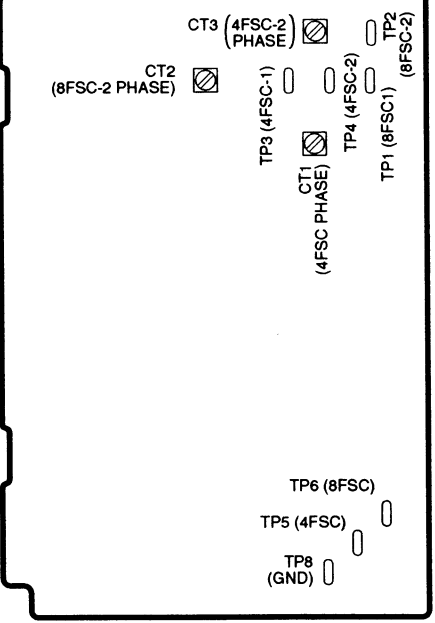
**POWER BOARD  
(PATTERN SIDE)**



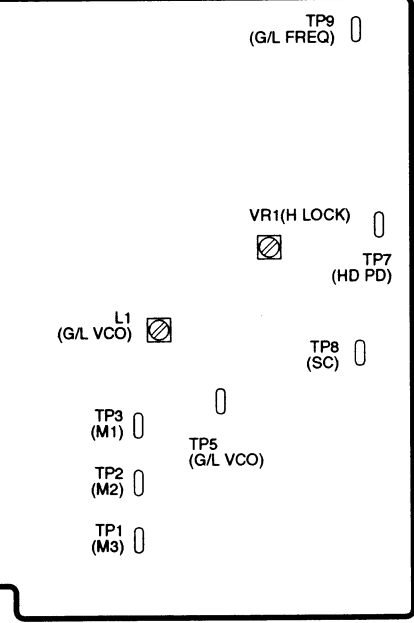
**SYSTEM CONTROL BOARD  
(PATTERN SIDE)**



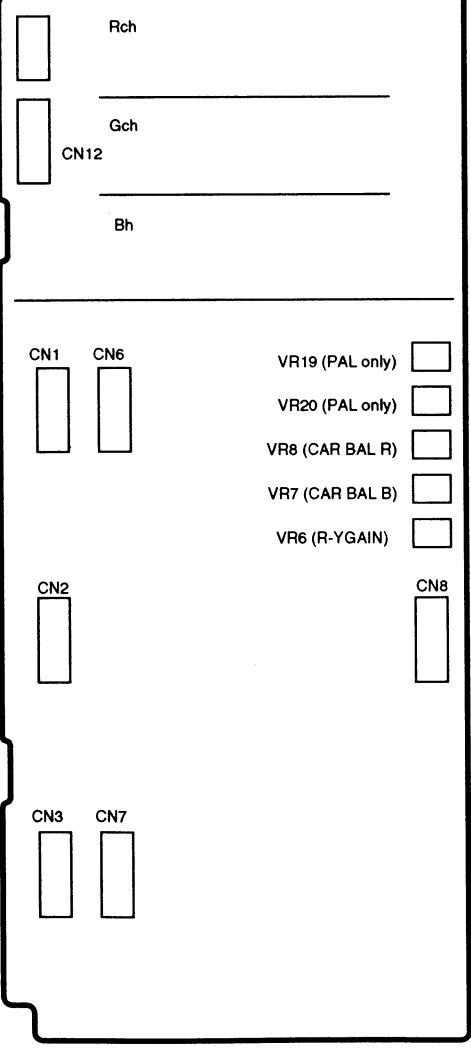
**DIGITAL PROCESS BOARD  
(COMPONENT SIDE)**



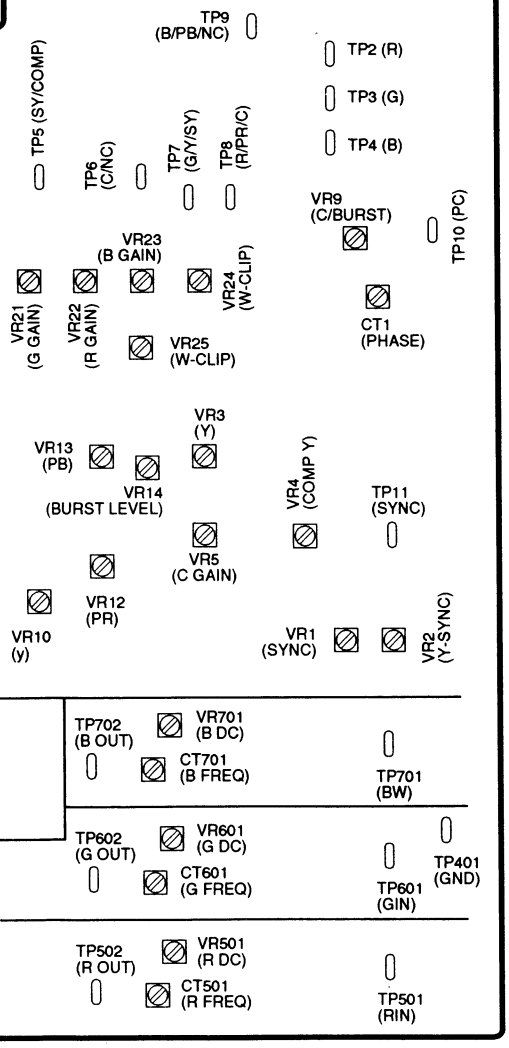
**SYNC BOARD  
(COMPONENT SIDE)**



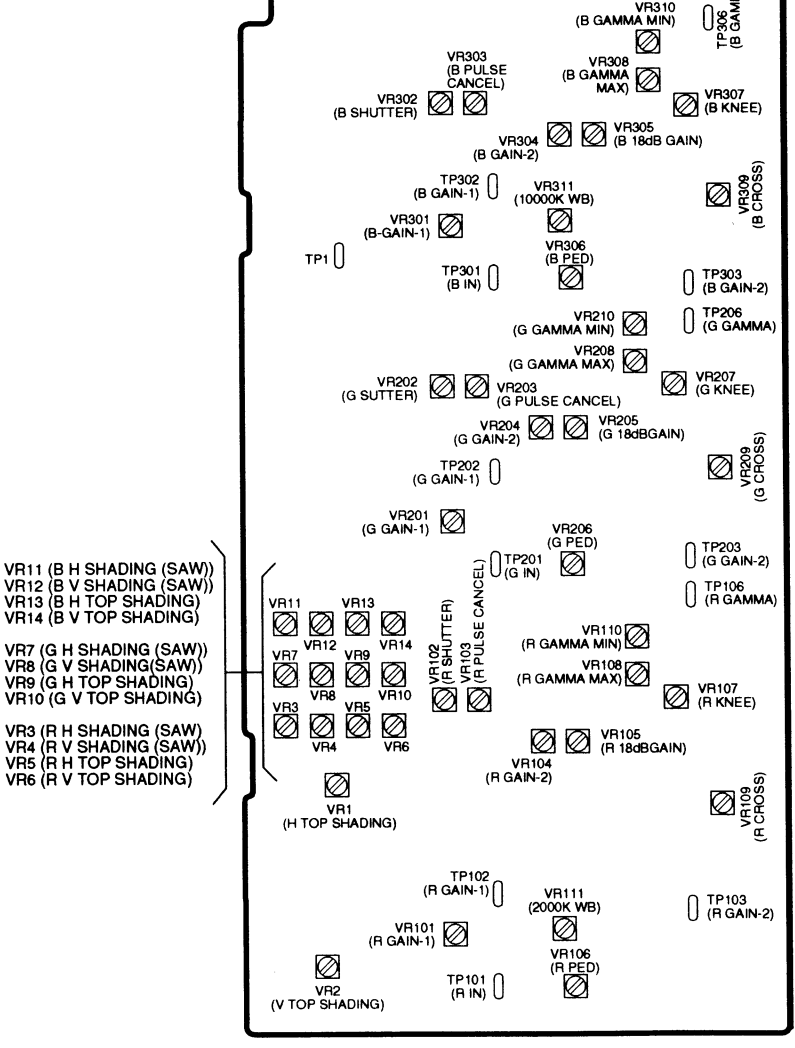
**PREAMP/ ENCODER BOARD  
(COMPONENT SIDE)**



**PREAMP/ENCODER BOARD  
(PATTERN SIDE)**

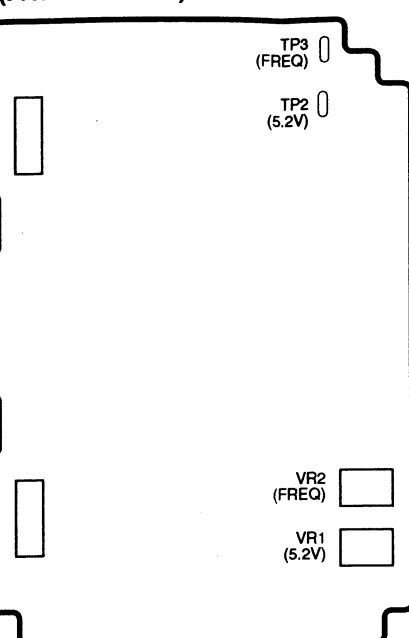


**PREPROCESS BOARD  
(PATTERN SIDE)**

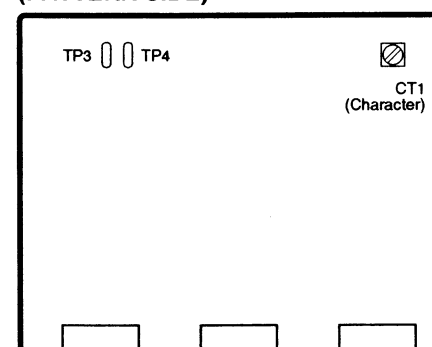


# POINTS AND ADJUSTING CONTROLS (WV-E550E)

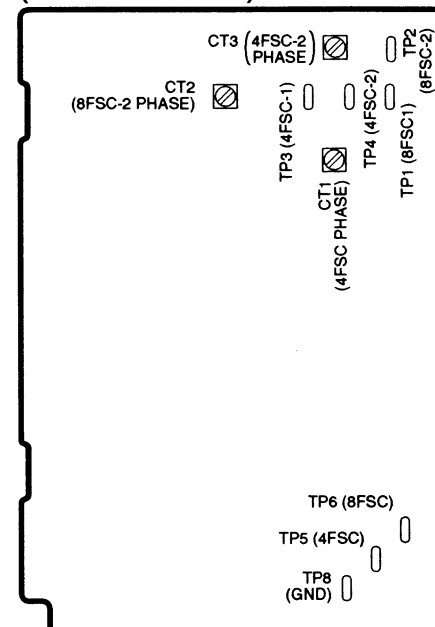
**POWER BOARD  
(PATTERN SIDE)**



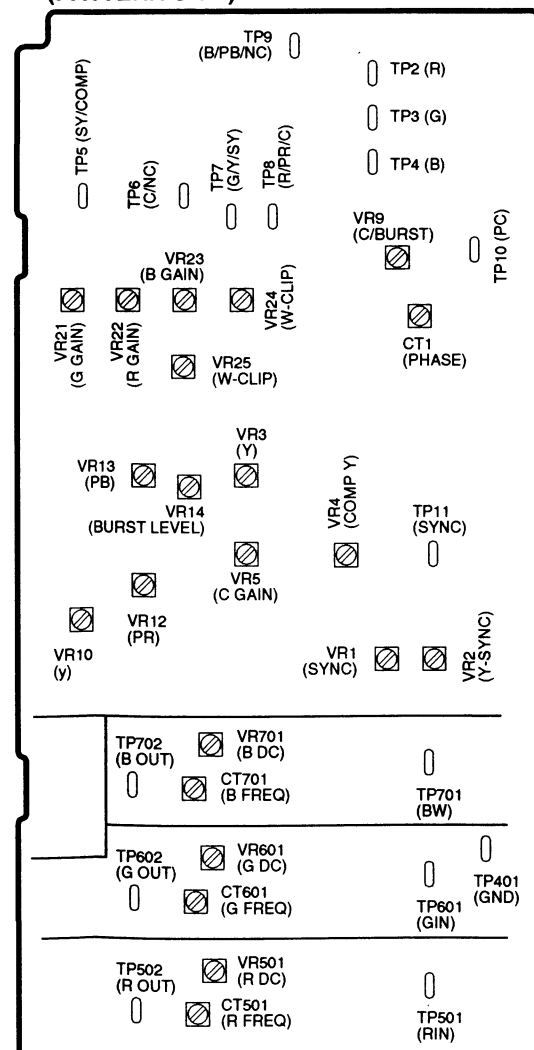
**SYSTEM CONTROL BOARD  
(PATTERN SIDE)**



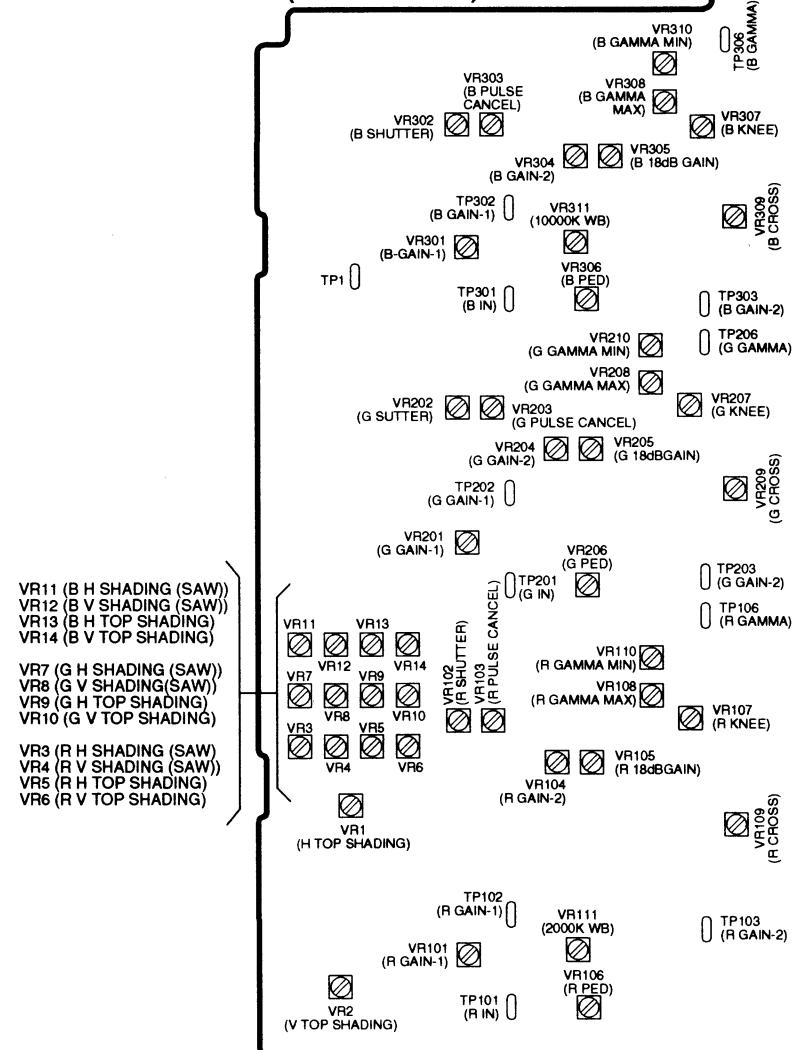
**DIGITAL PROCESS BOARD  
(COMPONENT SIDE)**



**PREAMP/ENCODER BOARD  
(PATTERN SIDE)**

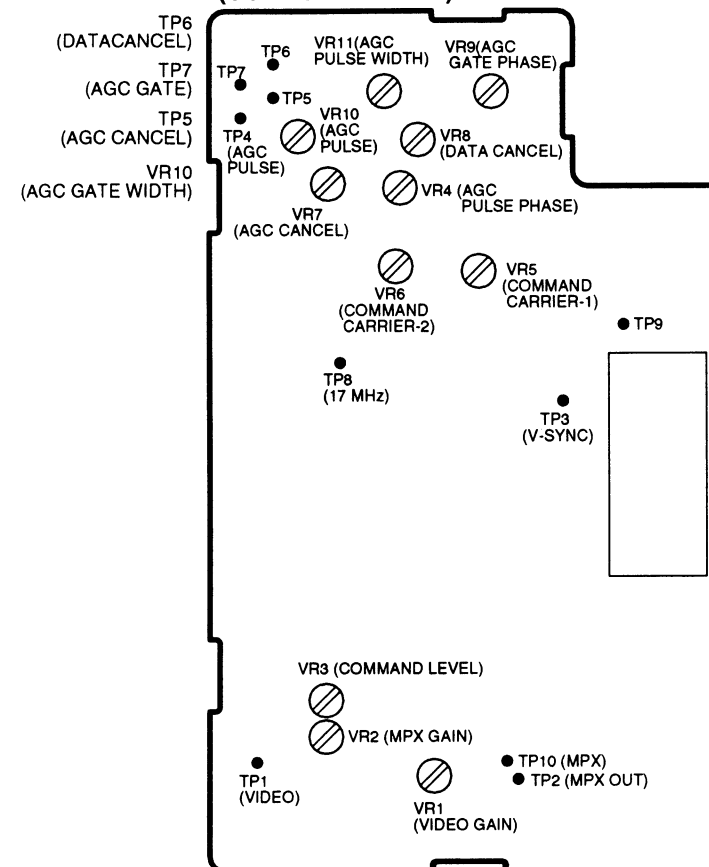


**PREPROCESS BOARD  
(PATTERN SIDE)**

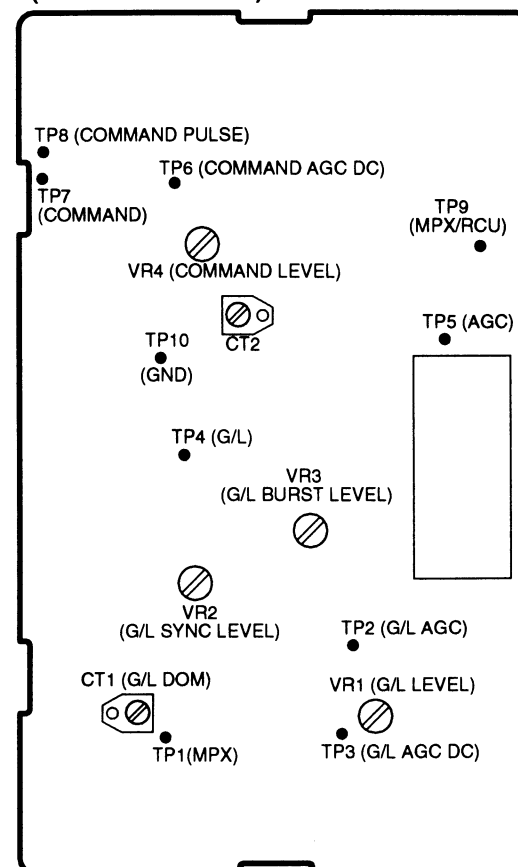


# (WV-PS550)

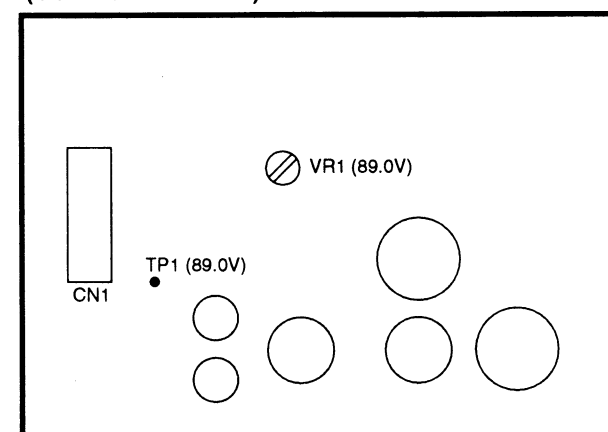
**MODULATOR BOARD  
(COMPONENT SIDE)**



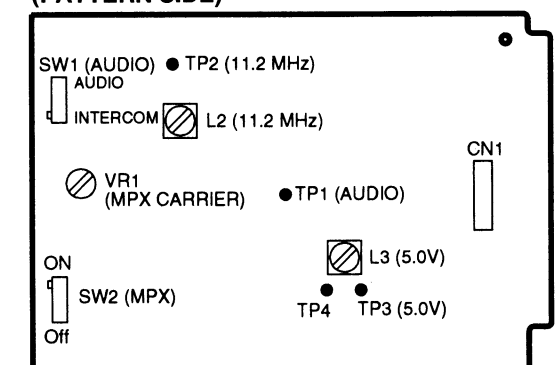
**DEMODULATOR BOARD  
(COMPONENT SIDE)**



**POWER SEPARATOR  
(COMPONENT SIDE)**

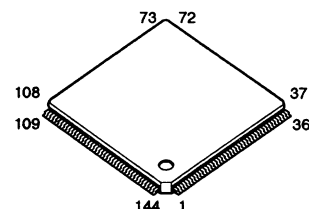


**AUDIO BOARD  
(PATTERN SIDE)**

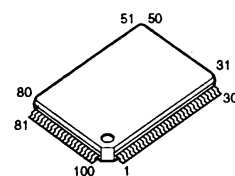


# APPEARANCE OF IC, TRANSISTOR AND DIODE WV-E550E

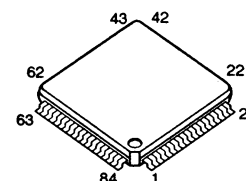
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YWVC5777



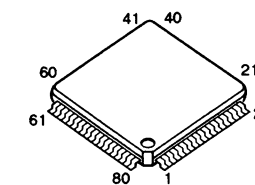
YWL7A0425  
YWVC5727  
YWVC5778



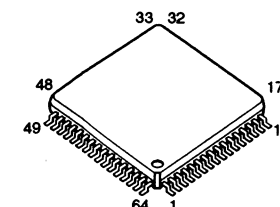
YWMN18885



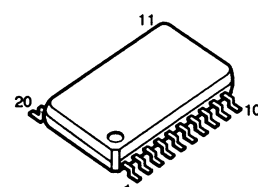
MN73093LBX



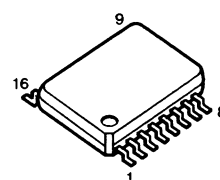
MN5197  
YWCXD1267R



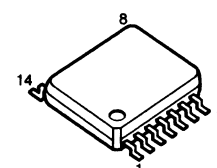
UPD16502GS  
MB3782PF  
MN6557AS  
YWM62352GP



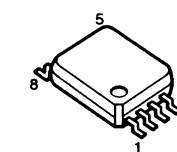
YWTC74HC4050AF YWUPD4050BG  
YWUPD74HC4049G YWUPD4053BG  
YWUPD74HC4053G YWUPD4051BG  
YWUPD4052BG YWMC74HC4040AF



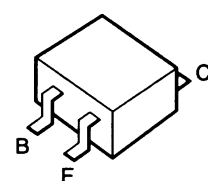
YWTC74AC04 NJM2902V, NJM2902M YWTC74AC164F  
YWUPD4081BG YWUPD4011BG  
YWUPD74HC32G YWUPD4011BG  
YWUPD74HC04G RTC450315B  
YWUPD74HC08G YWUPC4064G2  
YWTC74AC74F YWMC74HC10AF  
YWTC74AC00F YWMC74HC74AF  
YWTC74AC08F YWUPD4066BG  
UPD74HC164G



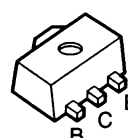
YWUPC4062G2 NJM2904M  
NJM2903M YWTC4W53F  
YWTC7WU04FU YWM51957BFP  
YWTC7W04FU NJM3414M  
YWTC7W74FU NJM4556M  
YWLM1881M YWTC7W04FL



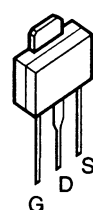
2SC1610 2SC4176  
2SA1532 2SC3930  
2SA1532-CD 2SC3931  
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2SB1218-QRS 2SD1819-QRS  
2SB1219 2SD1819  
2SD1820  
2SD1979



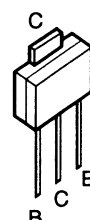
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2SB1073-QR  
2SB766A-RS  
2SD874A-RS



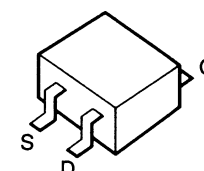
2SJ132



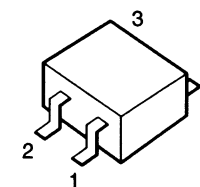
2SA1615  
2SC3074



2SK662

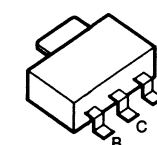


3SK157

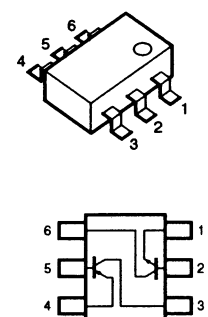


1. Substrate  
2. Gate  
3. Source  
4. Drain

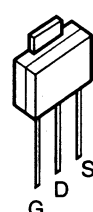
2SB766



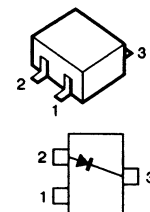
XP4601



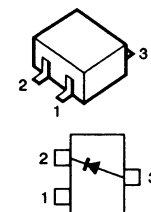
2SJ128



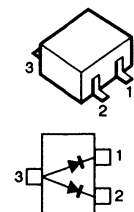
MA141K



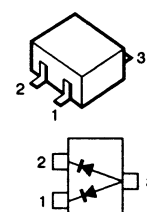
MA141A



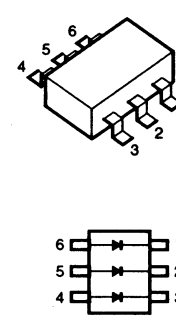
MA141WK



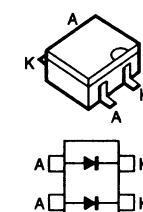
MA141WA



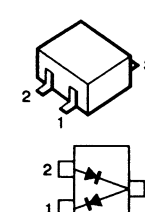
MA121



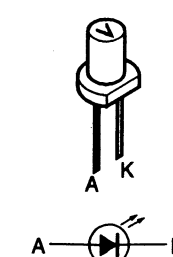
MA159



MA143

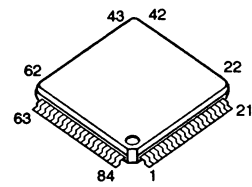


LN277RPX

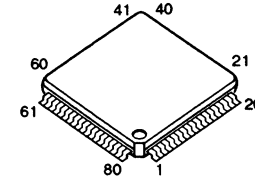


# APPEARANCE OF IC, TRANSISTOR AND DIODE WV-E550E

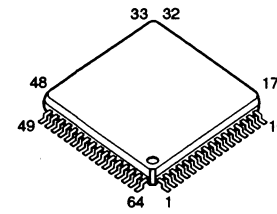
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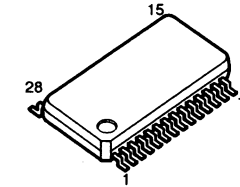
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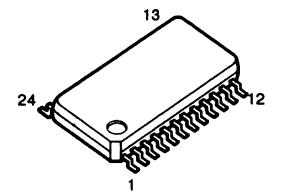
MN5197  
YWCXD1267R



YWM27C512F51  
YW43256AGU10L



YWCXA1229M  
YWM51272FP  
YWCXD1175AM



YWTC74AC04  
NJM2902V, NJM2902M  
YWUPD74HC32G  
YWUPD74HC04G  
YWUPD74HC08G  
YWTC74AC74F  
YWTC74AC00F  
YWTC74AC08F  
UPD74HC164G

YWTC74AC164F  
YWUPD4081BG  
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YWMC74HC74AF  
YWUPD4066BG

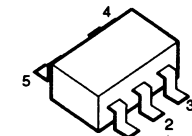
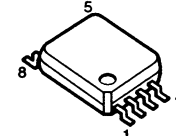
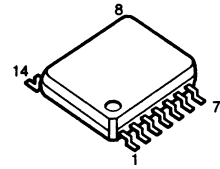
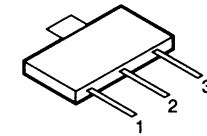
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YWTC7W74FU  
YWLM1881M

NJM2904M  
YWTC4W53F  
YWM51957BFP  
NJM3414M  
NJM4556M  
YWTC7W04FL

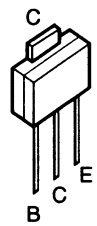
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YWTC7S32FU  
YWTC7S86FU  
YWTC7S04F  
YWTC7S11F  
YWTC4S66F

YWTC7SU04F  
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YWTC7S32F  
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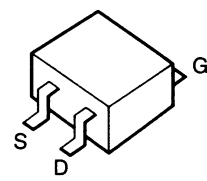
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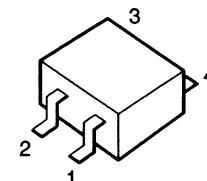
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2SC3074



2SK662

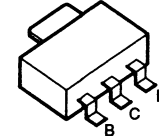


3SK157

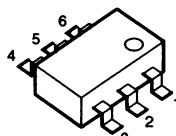


1. Substrate  
2. Gate  
3. Source  
4. Drain

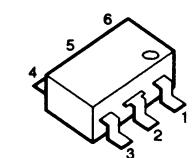
2SB766



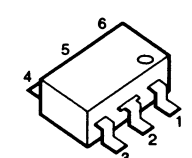
IMZ1  
UMZ1



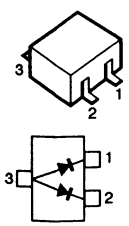
XN6435



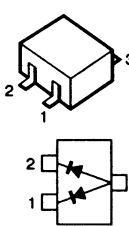
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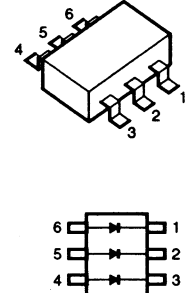
MA141WK



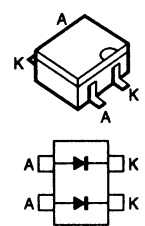
MA141WA



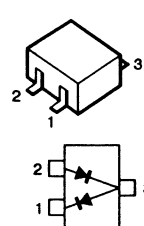
MA121



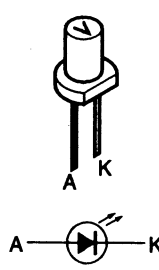
MA159



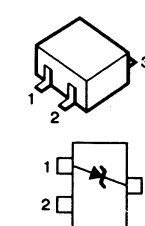
MA143



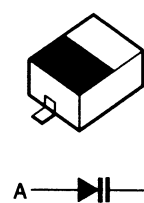
LN277RPX



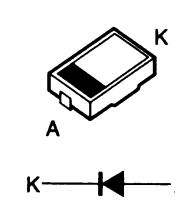
MA3062



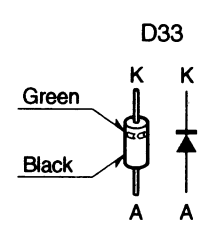
MA372



YWC80204

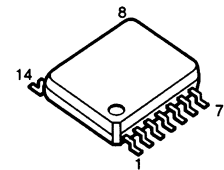


YWERB83004

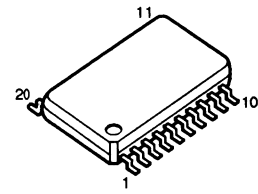


# APPEARANCE OF IC, TRANSISTOR AND DIODE WV-PS550

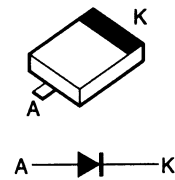
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YWUPD4538BG



YWMU45407F



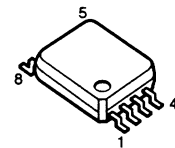
MA338



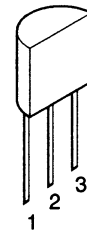
2SK1386



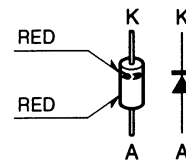
NJM2903M TL092CPS  
NJM4556MB TLC272CPS  
NJM592M8 YWLM1881M  
NJM4556MB YWUPC4062G2  
NJM4560M YWUPC4570G  
TLO62CPS



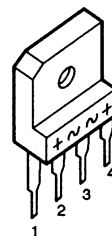
AN1431T



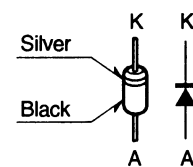
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YWRD27EB4  
YWRD15EB3



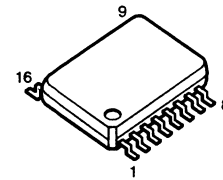
YWD3SBA60



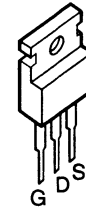
YWERC9102



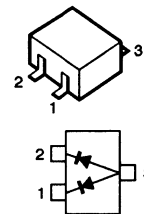
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UPD74HC4050G  
UPD74HC390AG  
UPD74HC221AG



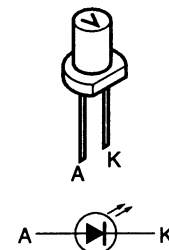
2SJ122



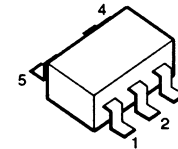
MA151WA



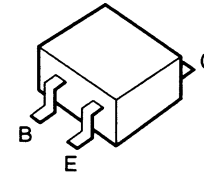
LN277PRX



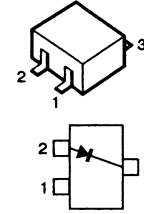
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YWTC4S69F  
YWTC7S08F  
YWTC7S04F  
YWTC7SU04F



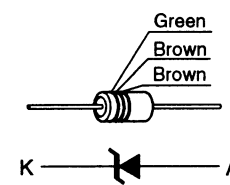
2SA1022-C  
2SB709-RS  
2SB1218-QRS  
2SB1219-QRS  
2SC2404-CD  
2SC3938-QRS  
2SD601-RS  
2SD602-QRS  
2SB792A-RS  
2SD814-QRS



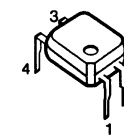
MA151K  
MA141K  
MA182



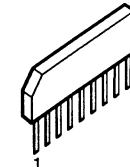
MA1051-M



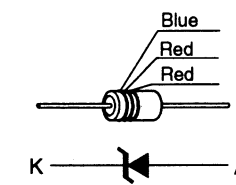
YWSN16913P



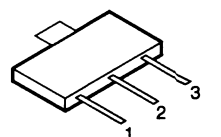
YWTA7303P  
YWEH-12A



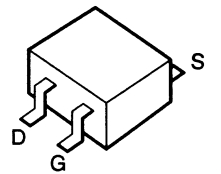
MA1062-M



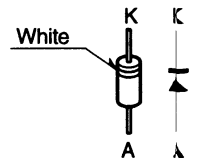
YW78L09UATE1  
YW78L05UATE2



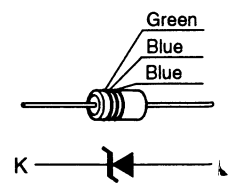
2SK198-Q  
2SK662-PQR



MA165  
YWERB38-05



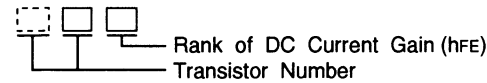
MA1056-H



# CHIP COMPONENTS

## 1. Chip Transistor

The transistor number is indicated on the top surface of the chip transistor using two alphabet letters or one numerical number and two alphabet letters.



### Transistor Number (Chip Transistor)

Letter	Transistor No.	Letter	Transistor No.
A	2SB709	X	2SD602A
B	2SB709A	Y	2SD601
C	2SB710	Z	2SD601A
D	2SB710A	1A	2SB799
E	2SA1022	1B	2SB814
F	2SA1034	1C	2SB902
H	2SA1035	1F	2SK321
I	2SB792	1K	2SK316
K	2SC2778	1L	2SK247
P	2SD814	1M	2SJ84
Q	2SD813	1N	2SK199
R	2SC2480	1O	2SK198
S	2SC2405	1T	2SC3077
T	2SC2406	1X	2SC2845
U	2SC2404	1Z	2SD1030
V	2SC2295	2B	2SK374
W	2SD602	2C	2SK116
BQ	2SB766A	UMT	2SC4081

### (Small Chip Transistor)

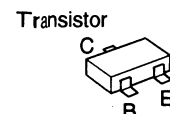
Letter	Transistor No.
A	2SB1218
B	2SB1218A
D	2SB1219A
U	2SC3931
W	2SD1820
X	2SD1820A
Y	2SD1819
E3	2SA1226
OS	2SB1219
UC	2SA1532
YU	2SC3938

### (Pair Transistor)

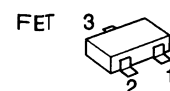
Letter	Transistor No.
5C	XN4601
5N	XN6501
5O	XN6401
5H	XP4501
5L	XN5501
7F	XN6534
7S	XP1601
7W	XN6435
X1	UMX1
Z1	UMZ1

Example: WQ → 2SD602-Q  
YQ → 2SD601-Q  
1BS → 2SB814-S

### Appearance and Symbols



C: Collector  
B: Base  
E: Emitter

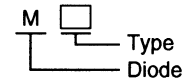


Gate Drain  
Source

	1	2	3
Except 2SK199	Drain	Source	Gate
2SK199	Gate	Drain	Source

## 2. Chip Diode

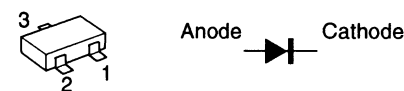
The diode number is indicated on the top surface of the chip diode using two alphabet letters.



### Diode Number

Letter	Diode No.	Letter	Diode No.
MA	MA151A	MI	MA152K
MB	MA152A	MK	MA28W-B
MC	MA153	ML	MA28T-A
MD	MA28-A	MN	MA151WA
ME	MA28-B	MO	MA152WA
MF	MA28W-A	MT	MA151WK
MH	MA151K	MU	MA152WK
MH	MA141K	6.2	MA3062
MC	MA143	SMD	RD421D

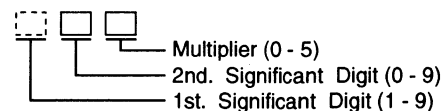
### Appearance and Symbol



	1	2	3
MA28/MA28W/MA28T	—	Anode	Cathode
MA151K/MA152K	—	Anode	Cathode
MA151A/MA152A	—	Cathode	Anode
MA151WK/MA152WK	Anode	Anode	Cathode
MA151WA/MA152WA	Cathode	Cathode	Anode
MA153	Cathode	Anode	Common
MA141K	—	Anode	Cathode
MA143	Anode	Cathode	Common
MA3062	Anode	—	Cathode
RD421D	Anode	—	Cathode

## 3. Chip Resistor

The resistor value is indicated on the bottom surface of the chip resistor using three digit numbers.



### Example:

330 →  $33 \times 10^0 = 33 \Omega$   
561 →  $56 \times 10^1 = 560 \Omega$   
123 →  $12 \times 10^3 = 12 \text{ k}\Omega$

**Note:** Zero ohm resistor (jumper chip) is colored red or green.

## 4. Chip Capacitor

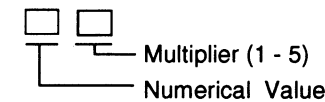
The capacitive value of replacement chip capacitors is indicated on the bottom surface. original parts do not have value indication.

If the capacitive value is less than 100 pF, the value will be indicated by one or two digit number expressing the capacity directly in pF.

### Example:

0.5 → 0.5 pF    2.5 → 2.5 pF  
.75 → 0.75 pF    33 → 33 pF  
1 → 1 pF    82 → 82 pF

If the capacitive value is 100 pF or greater, the value will be indicated by an alpha-numeric code. The letter precedes the number and expresses a numerical value to be multiplied by the number which follows.



### Numerical Value

Letter	Value	Letter	Value
A	10	N	33
B	11	P	36
C	12	Q	39
D	13	R	43
E	15	S	47
F	16	T	51
G	18	U	56
H	20	V	62
J	22	W	68
K	24	X	75
L	27	Y	82
M	30	Z	91

\* Letters I and O are not used.

Example: A1 →  $10 \times 10^1 = 100 \text{ pF}$   
N2 →  $33 \times 10^2 = 3300 \text{ pF}$   
S3 →  $47 \times 10^3 = 47000 \text{ pF}$

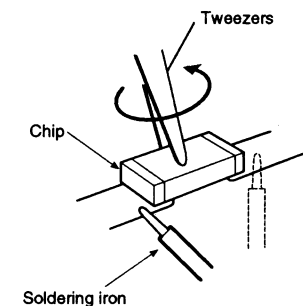
## 5. Precautions in replacing the chip component

1. Make sure that the unit is turned OFF when replacing the chip.
2. Use tweezers to prevent any damage to the chip surface.
3. Do not re-use the chips after removal.
4. Do not rub the electrode of chips.
5. Do not subject the chips to excessive stress.
6. It is recommended that a pencil-type soldering iron to be used.
7. The solder whose diameter is less than 0.5 mm is recommended.
8. Do not heat the chip beyond 3 second.
9. Maintain temperature control under 260°C (500°F) when soldering.

## 5-1 Removal (Transistor, Diode, Resistor and Capacitor)

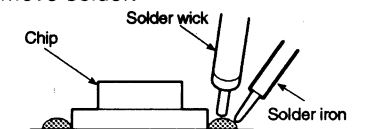
1. Add the solder to both ends of the chip (three leads for chip transistor).
2. While attaching the soldering iron to both ends of the chip (three leads for chip transistor) as shown below, remove the chip by turning with tweezers.

**Note:** Be careful not to damage other chips.

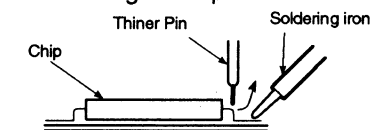


## 5-2 Removal (IC)

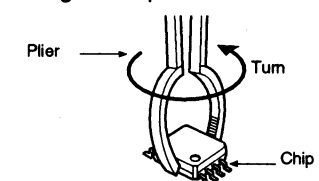
1. Add the solder wick and soldering iron to each lead of the IC and remove solder.



2. Add the soldering iron to each lead of the IC and left each lead of the IC using thinner pin.

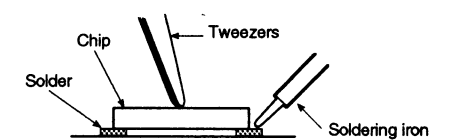


3. Remove IC turning it with plier.

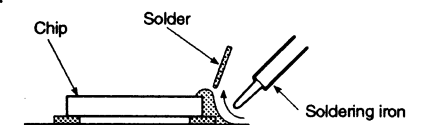


## 5-3 Mounting

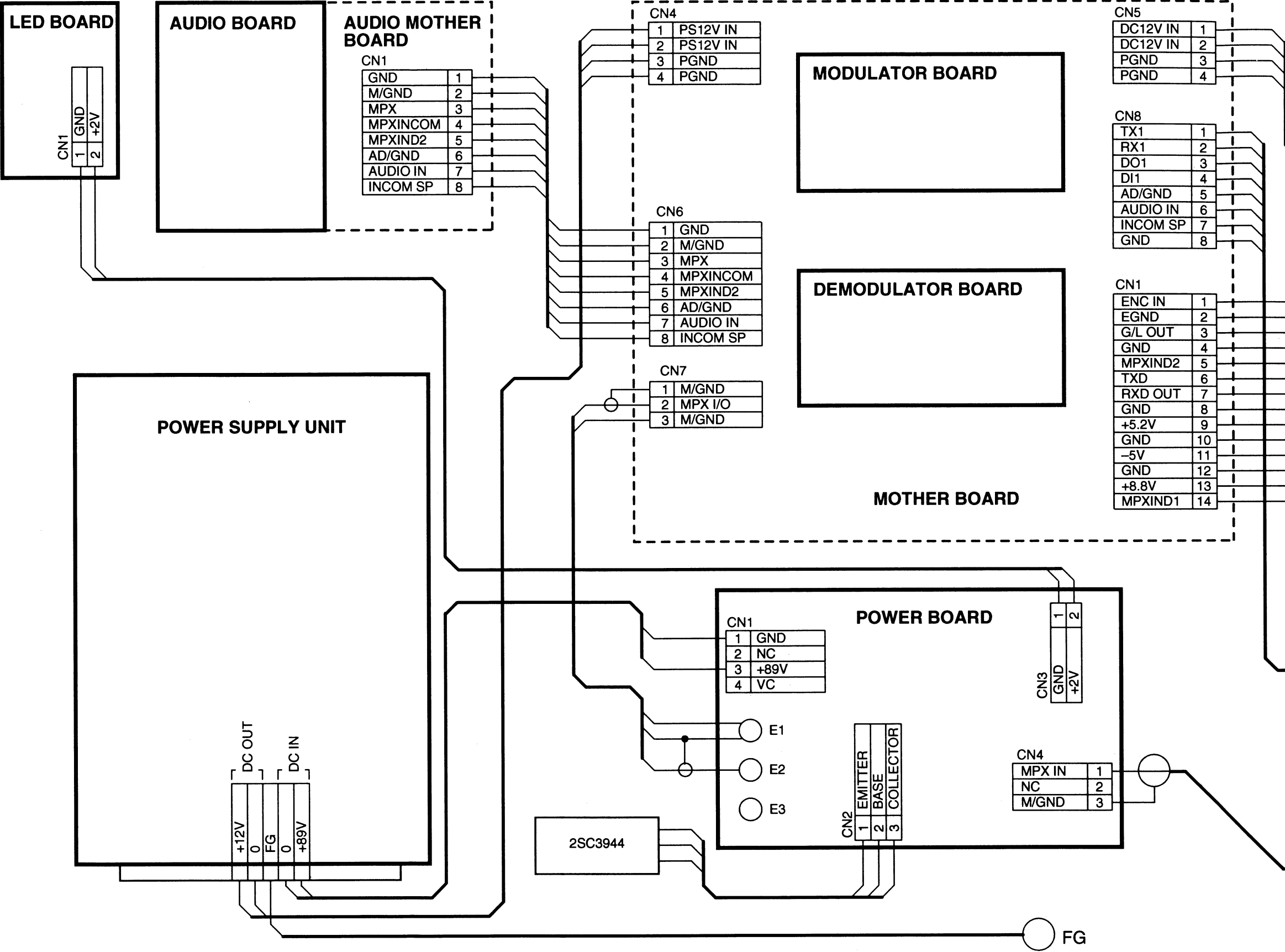
1. Place the solder thinly on the chip mounting foil.
2. Solder the chip temporarily while holding the chip with the tweezers.



3. Solder both ends of chip (three leads for chip transistor).

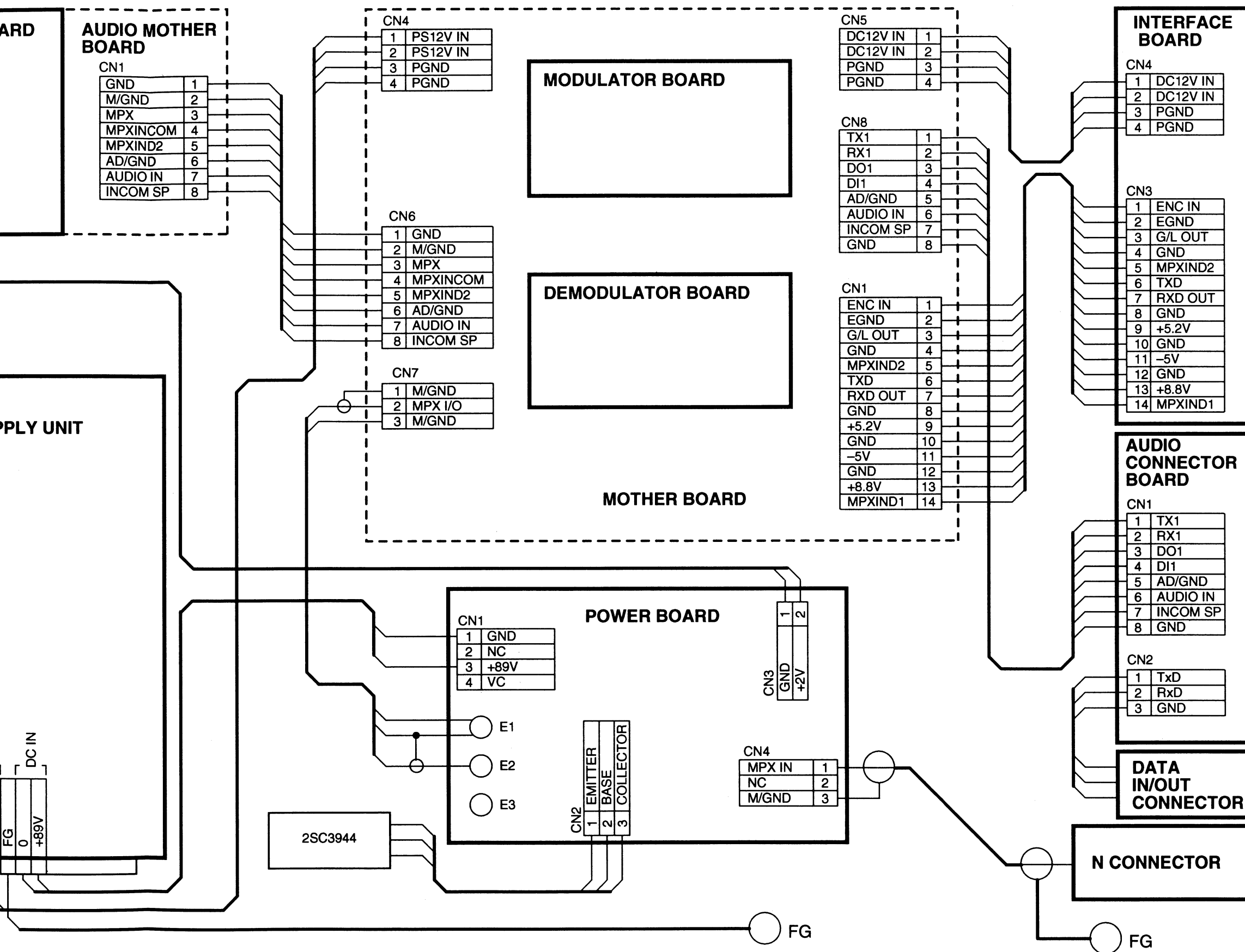


WIRING DIAGRAM (WV-PS550)

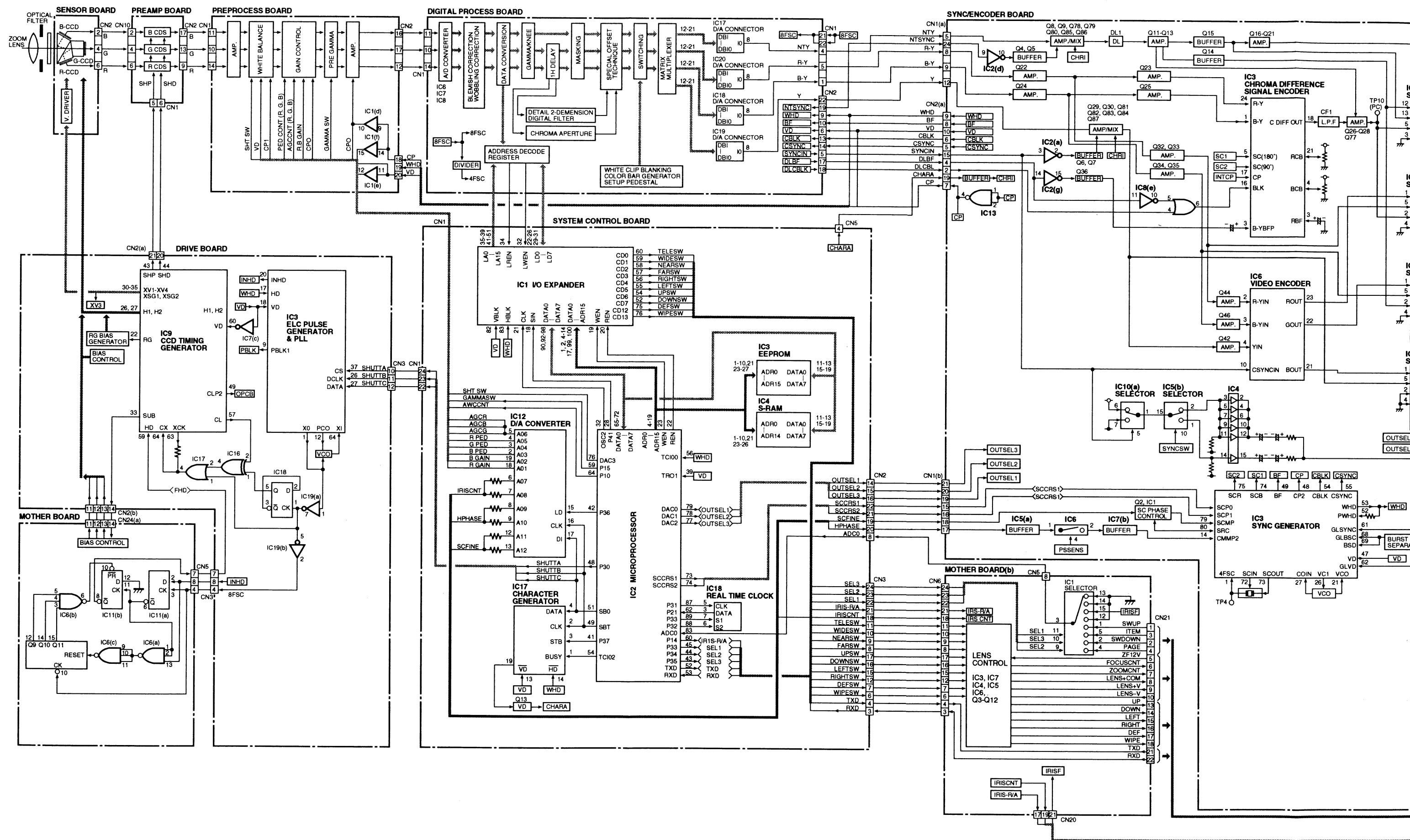




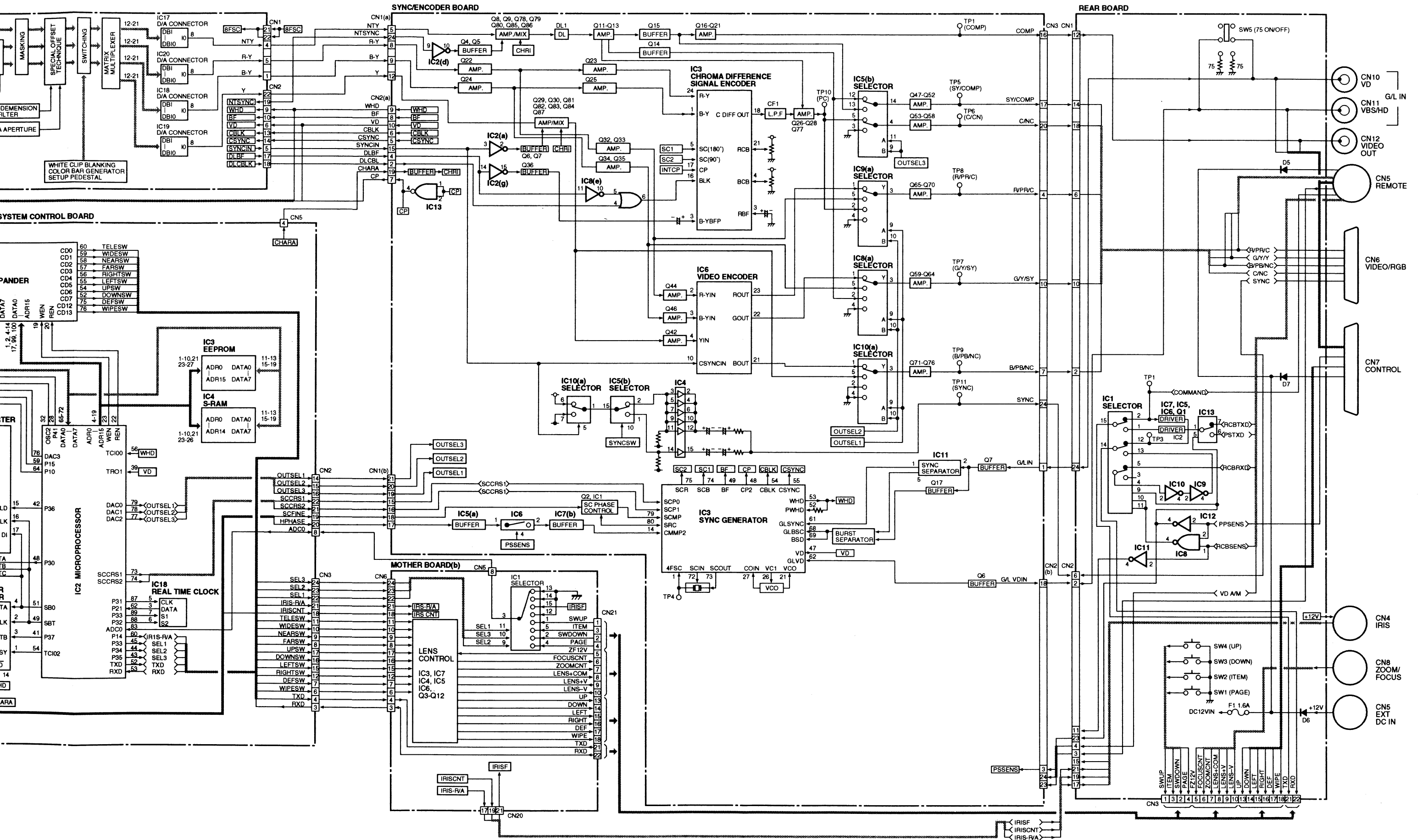
# WIRING DIAGRAM (WV-PS550)



# OVERALL BLOCK DIAGRAM

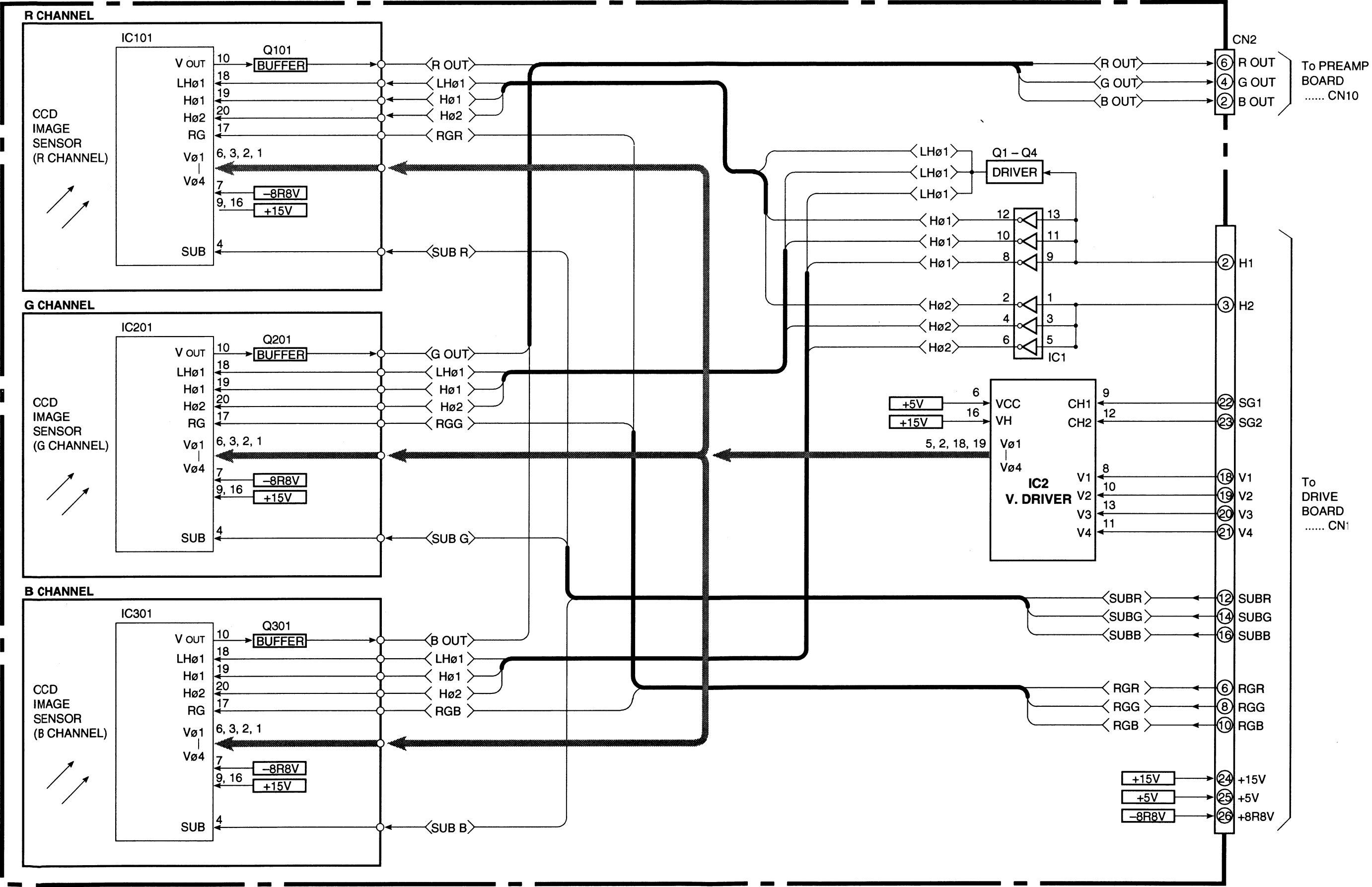


# OVERALL BLOCK DIAGRAM



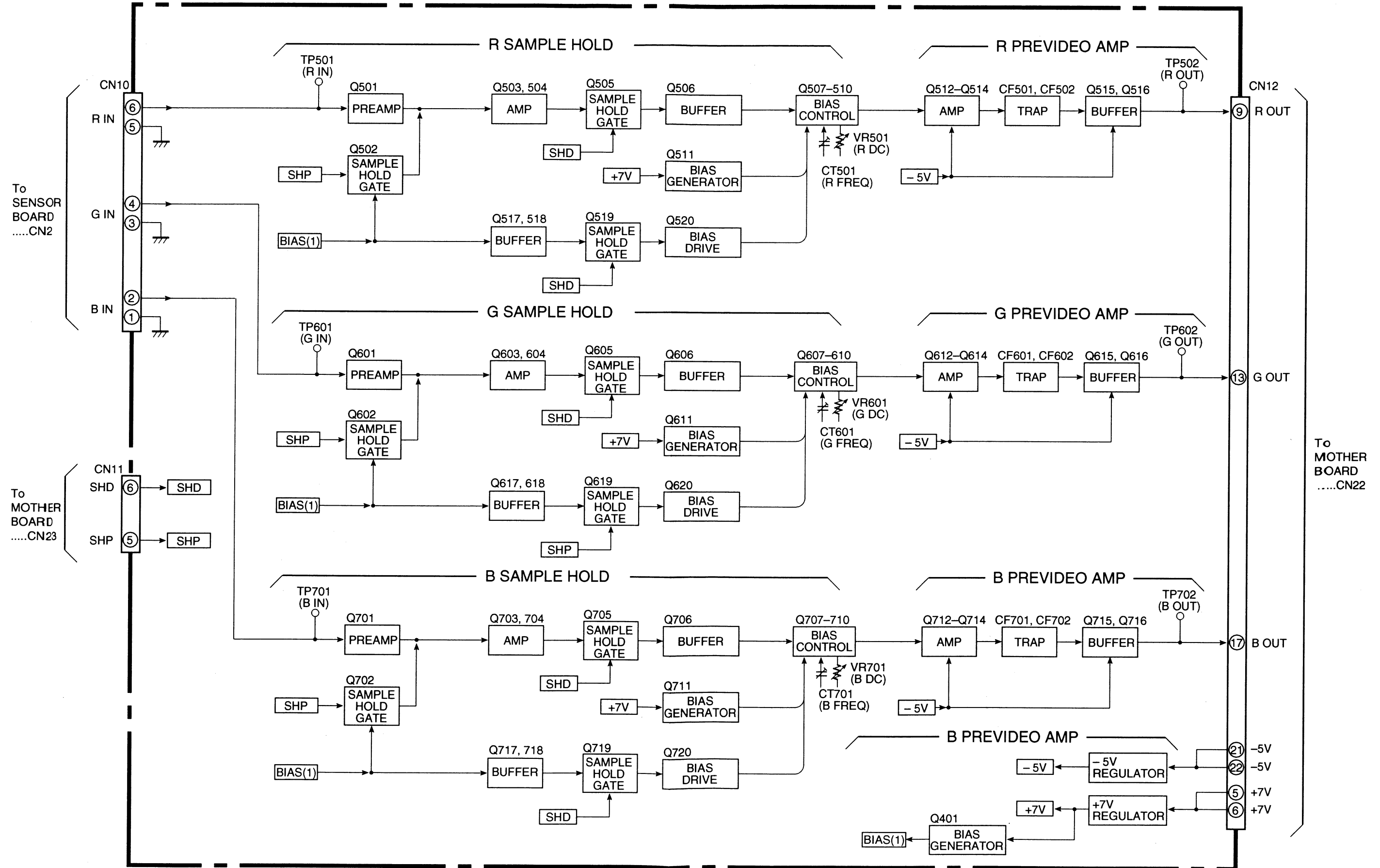
BLOCK DIAGRAM OF SENSOR BOARD

SENSOR BOARD



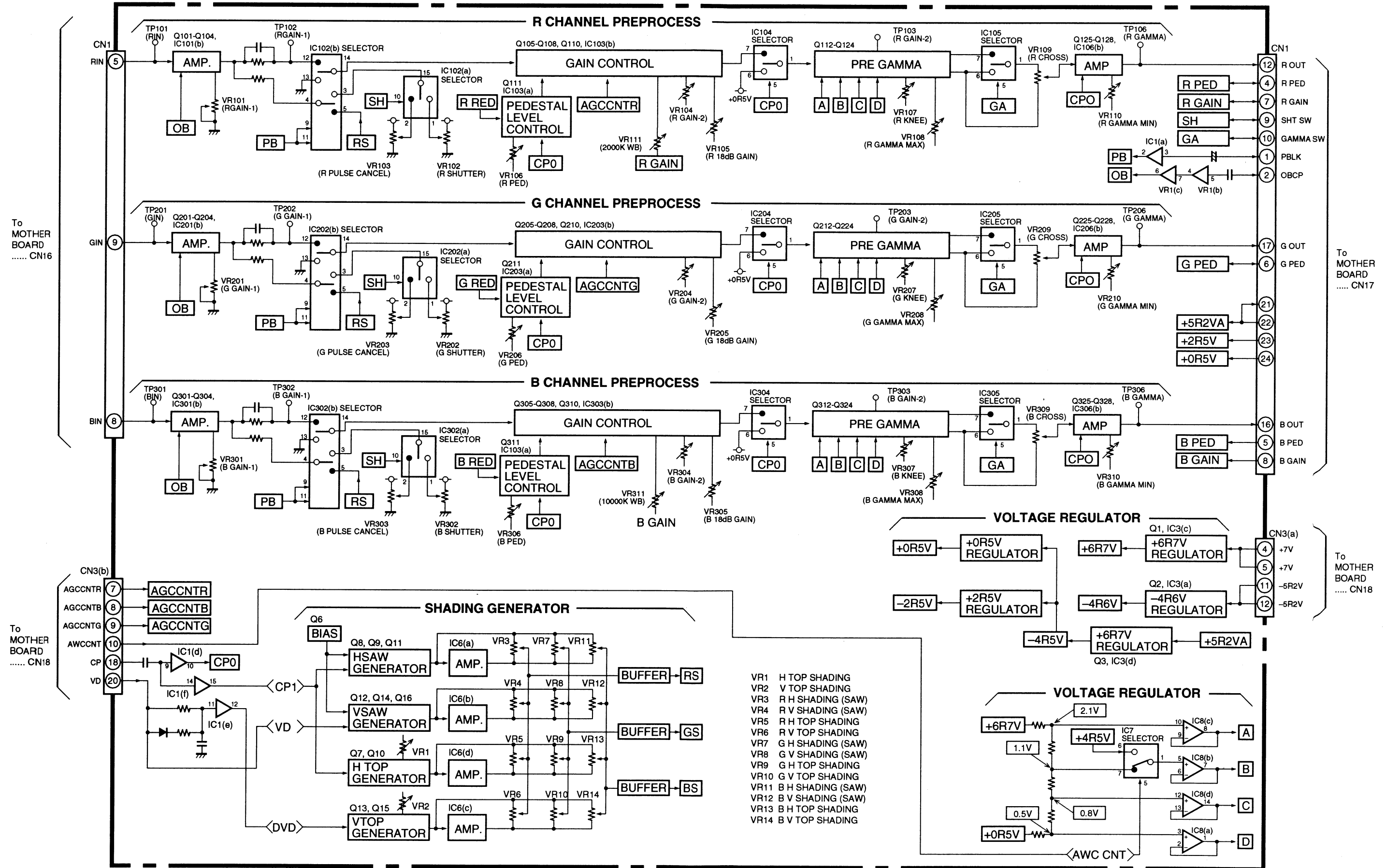
# BLOCK DIAGRAM OF PREAMP/ENCODER BOARD (PREAMP SECTION)

## PREAMP SECTION



# BLOCK DIAGRAM OF PREPROCESS BOARD

## PREPROCESS BOARD



## BLOCK DIAGRAM OF DRIVE BOARD





## MOTHER BOARD

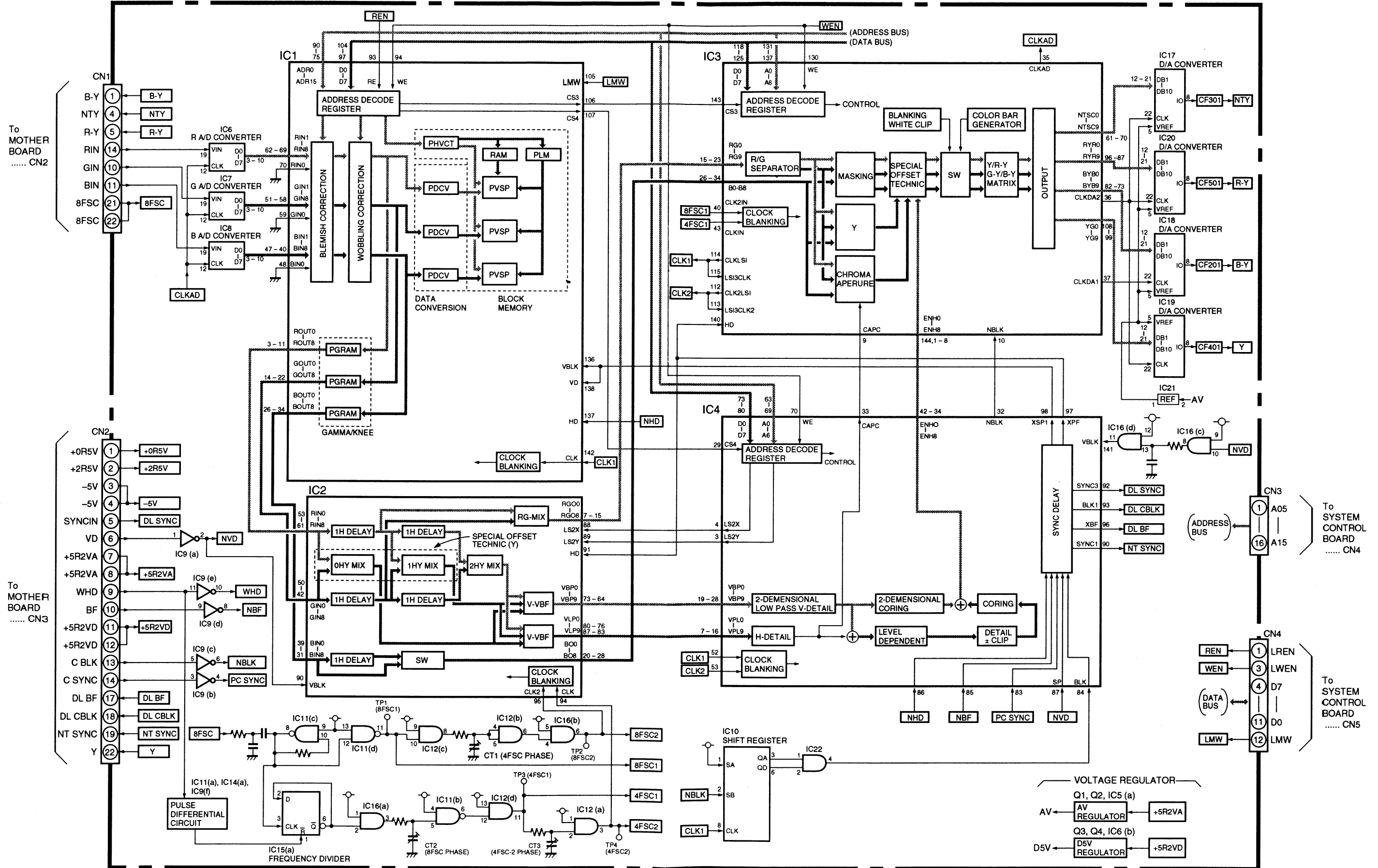




WV-E550E  
WV-PS550

## BLOCK DIAGRAM OF DIGITAL PROCESS BOARD

## DIGITAL PROCESS BOARD

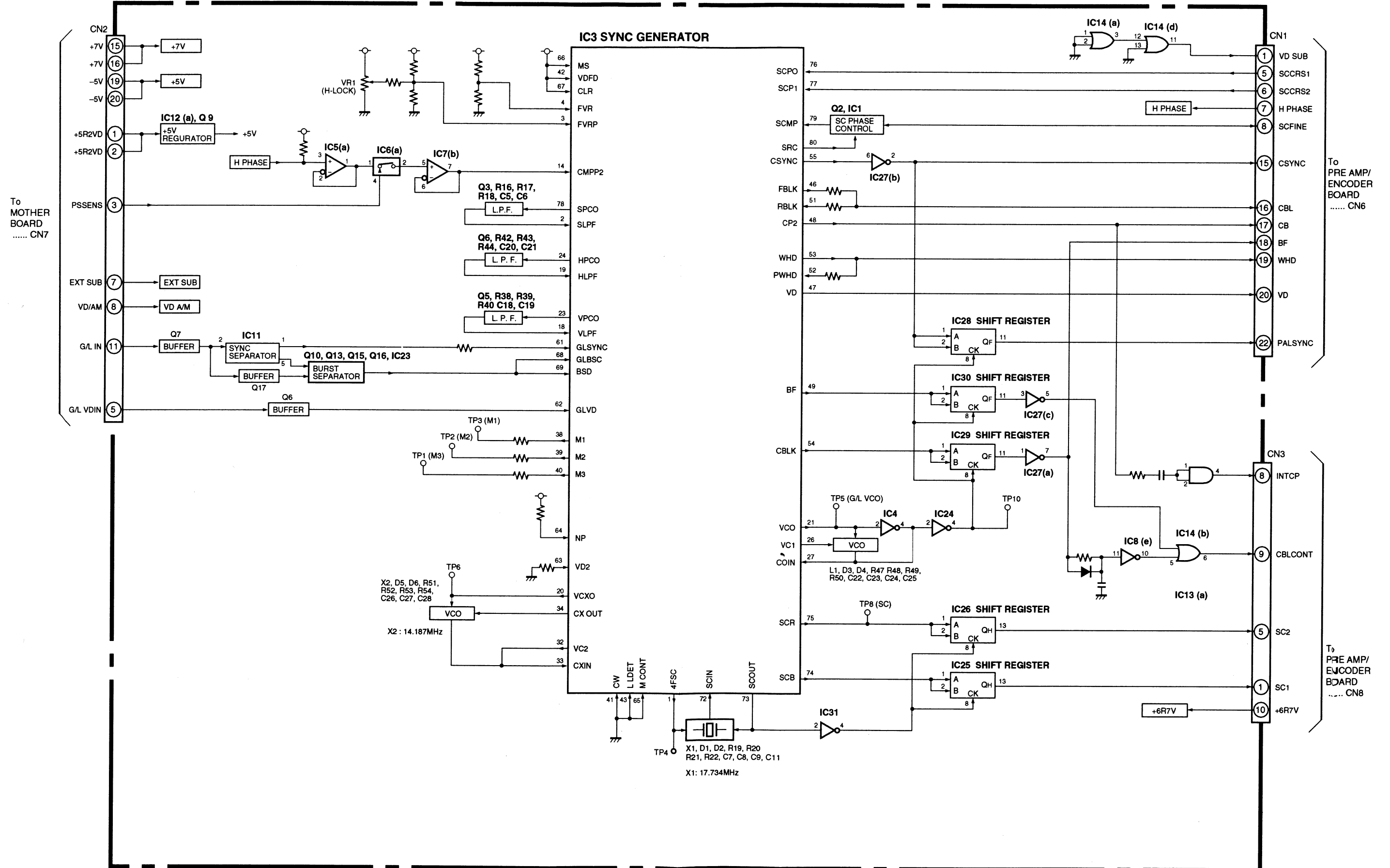


## SYSTEM CONTROL BOARD



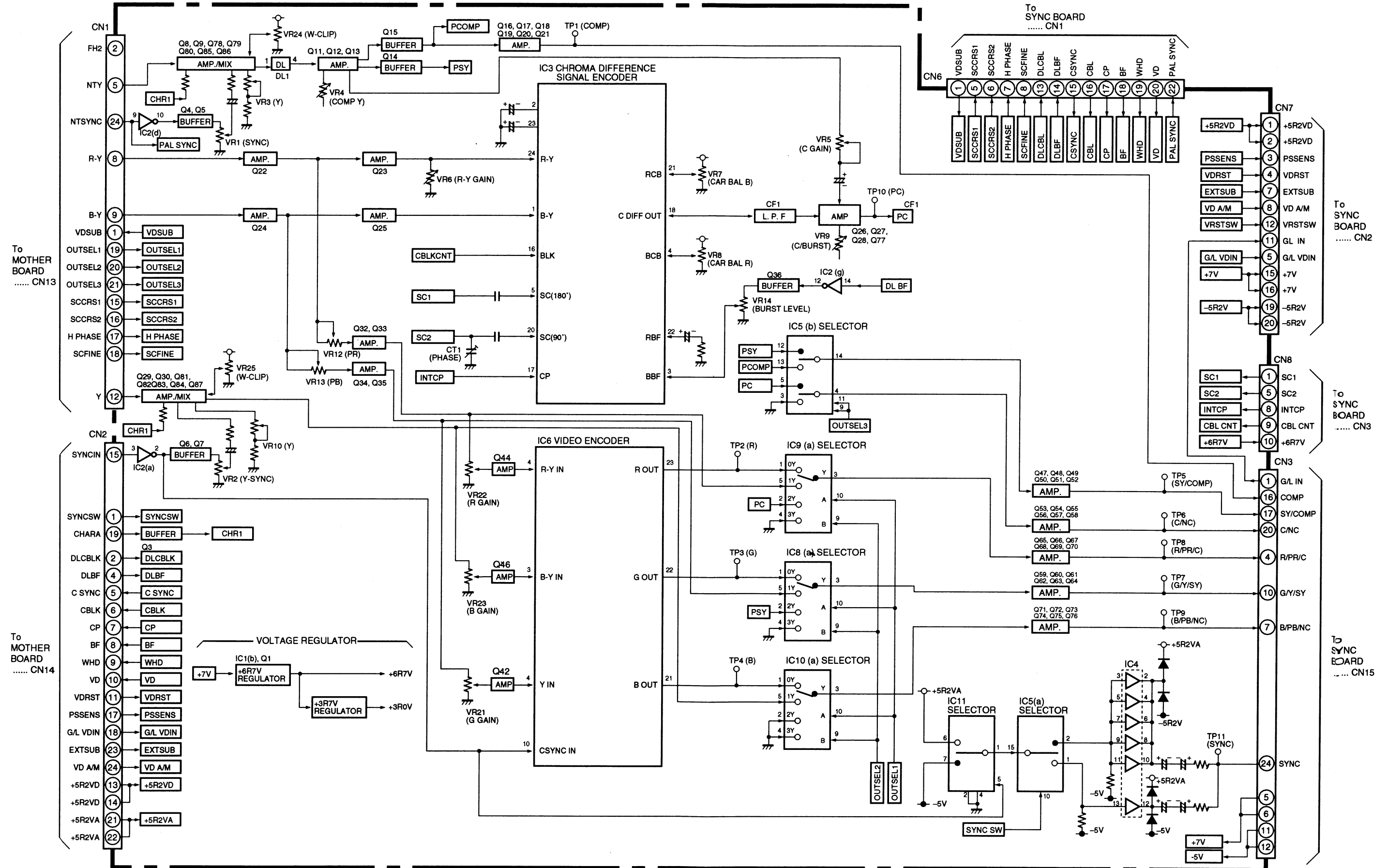
# BLOCK DIAGRAM OF SYNC BOARD

## SYNC BOARD



# BLOCK DIAGRAM OF PREAMP/ENCODER BOARD (ENCODER SECTION)

## ENCODER SECTION

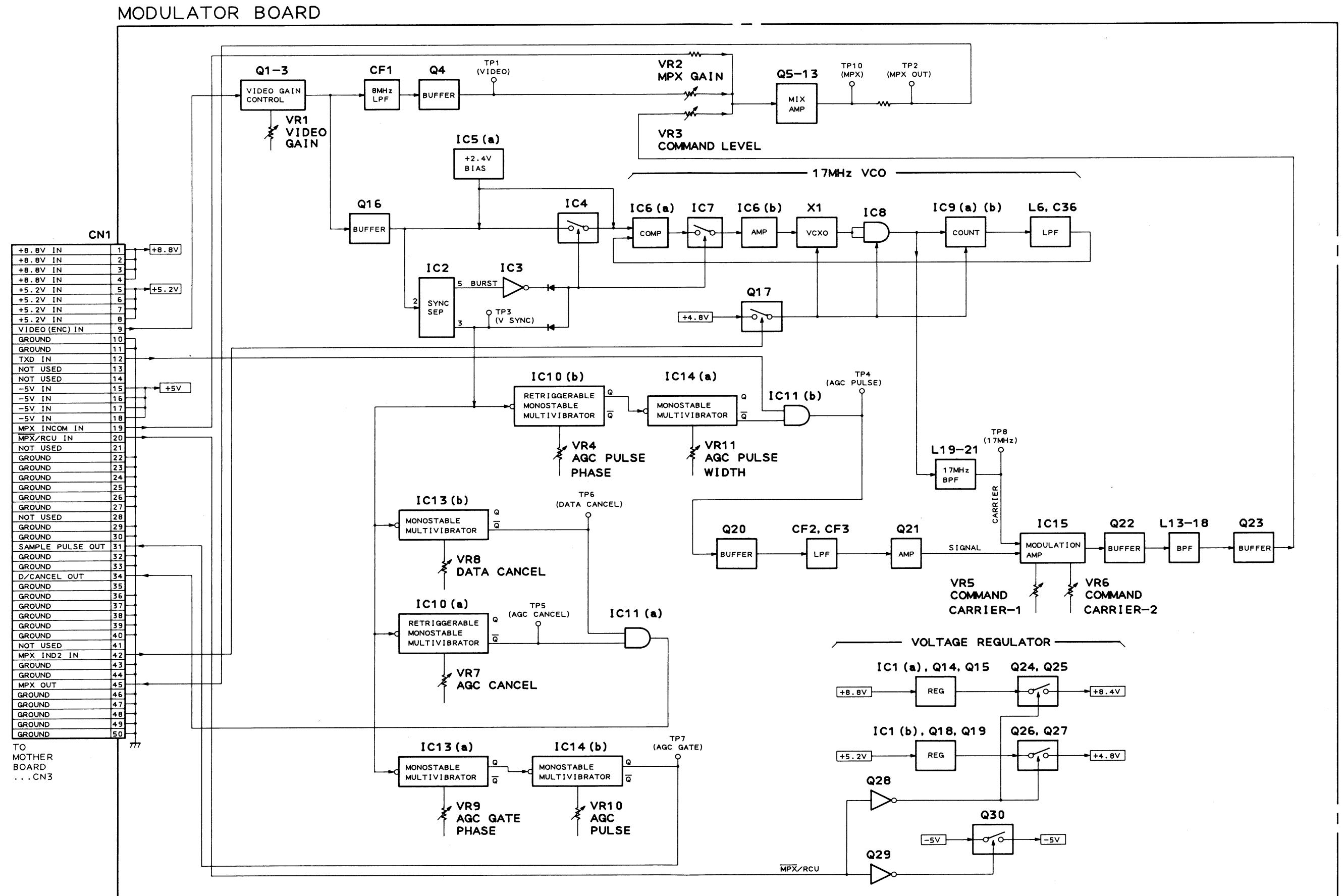


WV-E550E  
WV-PS550

## BLOCK DIAGRAM OF POWER BOARD

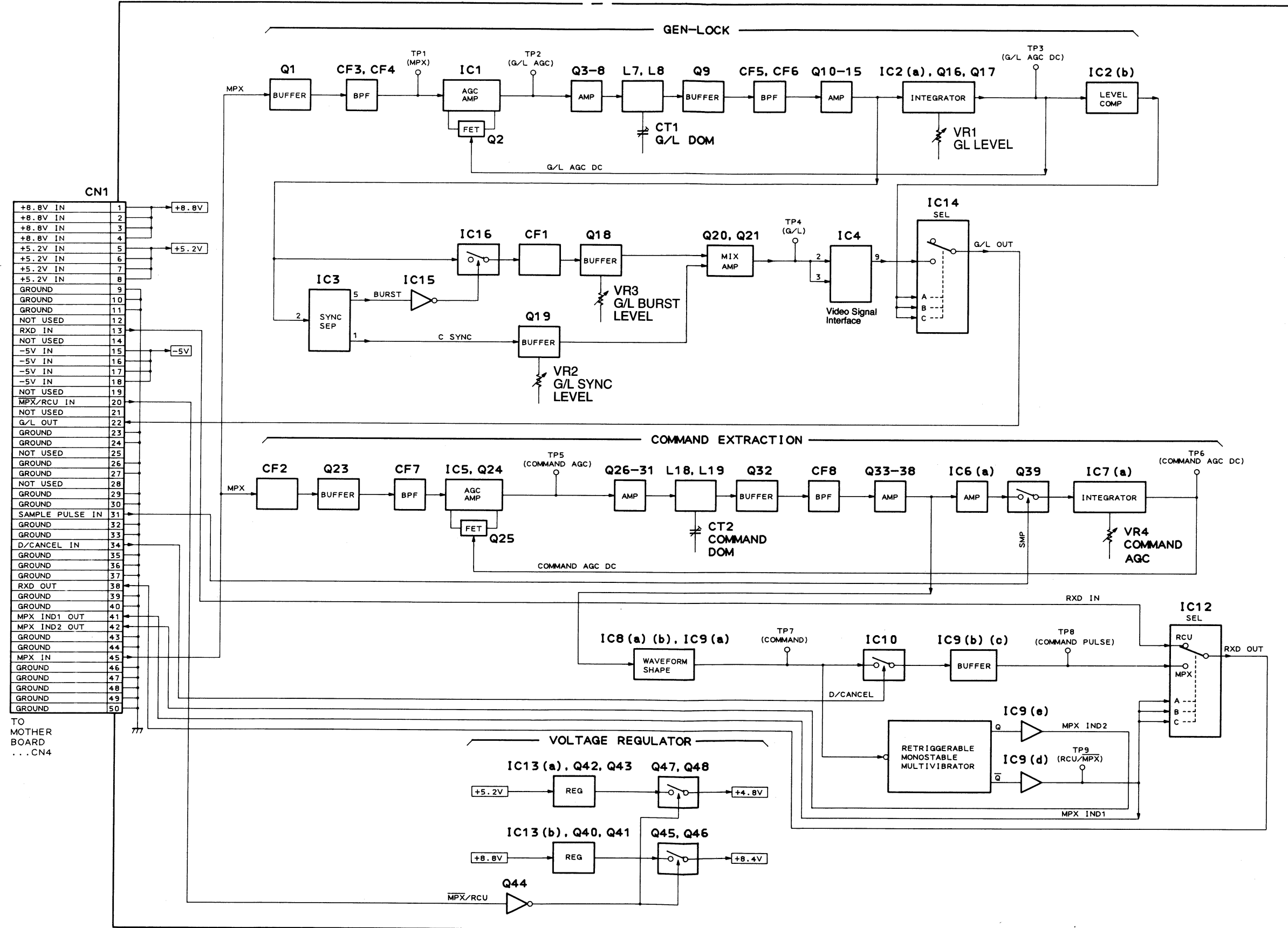


# BLOCK DIAGRAM OF MODULATOR BOARD (WV-PS550)



# BLOCK DIAGRAM OF DEMODULATOR BOARD (WV-PS550)

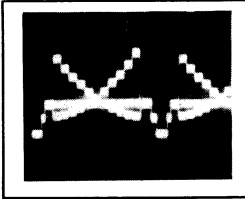
## DEMODULATOR BOARD



## SCHEMATIC DIAGRAM OF PREAMP/ENCODER

## PREAMP SECTION

1. 10 $\mu$ sec/DIV 0.1V/DIV

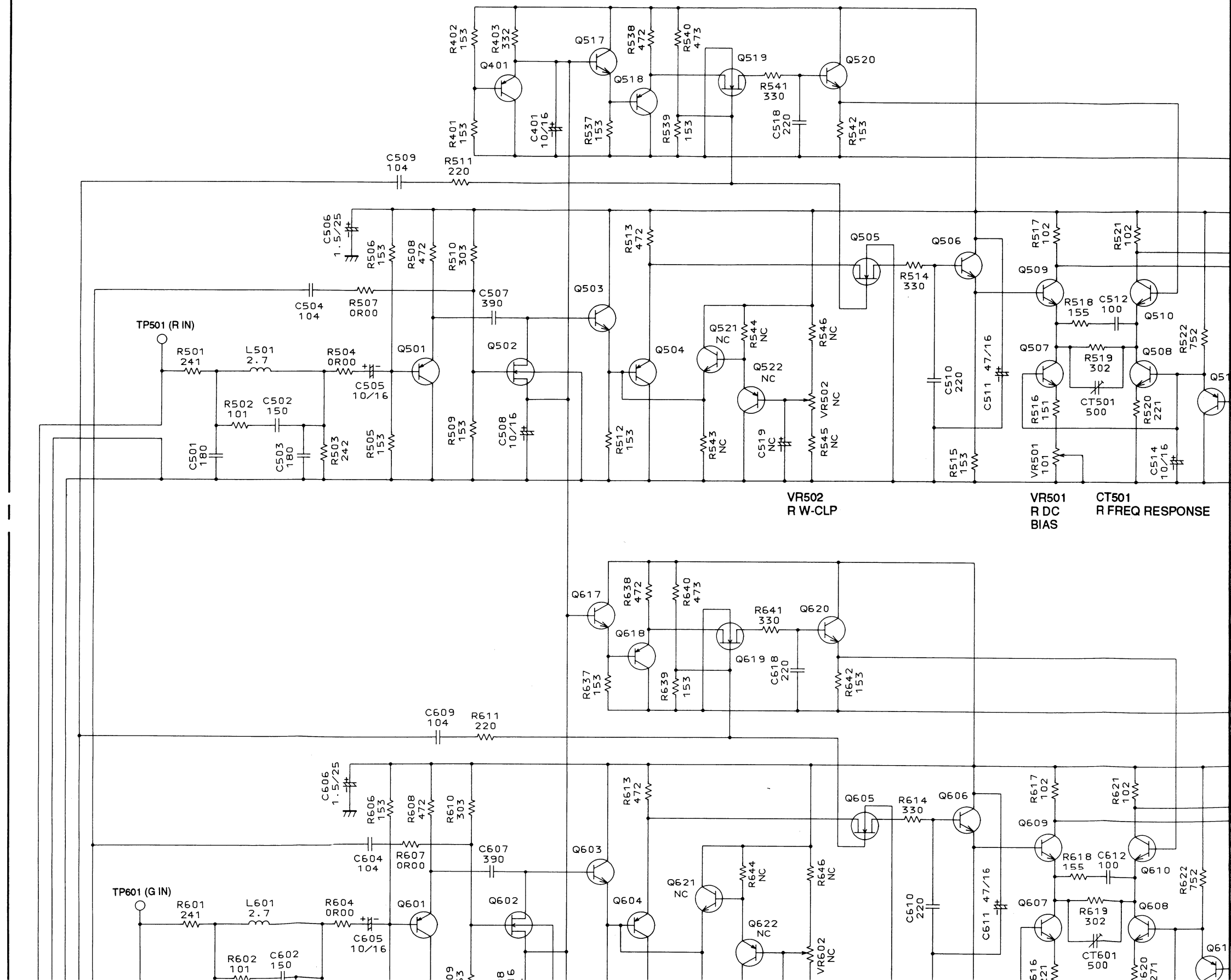


## < Index> PREAMP SECTION

IC401	A5, C5	Q80	D3
Q1	E2	Q81	B2
Q3	E3	Q82	C2
Q4	E4	Q83	B3
Q5	E4	Q84	B3
Q6	E4	Q85	D2
Q7	E4	Q86	D3
Q8	D2	Q87	C2
Q9	D2	Q401	D2
Q11	D3	Q402	C5
Q12	D3	Q403	C5
Q13	D3	Q404	B5
Q14	D4	Q405	A5
Q15	D4	Q501	C2
Q16	D4	Q502	C2
Q17	D4	Q503	C2
Q18	D4	Q504	C2
Q19	D4	Q505	C2
Q20	D4	Q506	C3
Q21	D4	Q507	C3
Q22	C2	Q508	C3
Q23	C2	Q509	C3
Q24	C3	Q510	C3
Q25	C3	Q511	C3
Q26	C5	Q512	C3
Q27	C5	Q513	C3
Q28	C5	Q514	C4
Q29	B2	Q515	C4
Q30	B2	Q516	C4
Q32	B3	Q517	D2
Q33	C3	Q518	D2
Q34	B3	Q519	D2
Q35	C3	Q520	D2
Q36	C4	Q601	B2
Q42	B3	Q602	B2
Q44	B3	Q603	B2
Q46	B3	Q604	B2
Q47	A2	Q605	B2
Q48	A2	Q606	B3
Q49	A2	Q607	B3
Q50	A2	Q608	B3
Q51	A2	Q609	B3
Q52	A2	Q610	B3
Q53	A3	Q611	B3
Q54	A3	Q612	B3
Q55	A3	Q613	B3
Q56	A3	Q614	B4
Q57	A3	Q615	B4
Q58	A3	Q616	B4
Q59	A4	Q617	C2
Q60	A4	Q618	C2
Q61	A4	Q619	C2
Q62	A4	Q620	C2
Q63	A4	Q701	A2
Q64	A4	Q702	A2
Q65	A5	Q703	A2
Q66	A5	Q704	A2
Q67	A5	Q705	A2
Q68	A5	Q706	A3
Q69	A5	Q707	A3
Q70	A5	Q708	A3
Q71	A6	Q709	A3
Q72	A6	Q710	A3
Q73	A6	Q711	A3
Q74	A6	Q712	A3
Q75	A6	Q713	A3
Q76	A6	Q714	A4
Q77	C5	Q715	A4
Q78	D2	Q716	A4
Q79	D3	Q717	B2

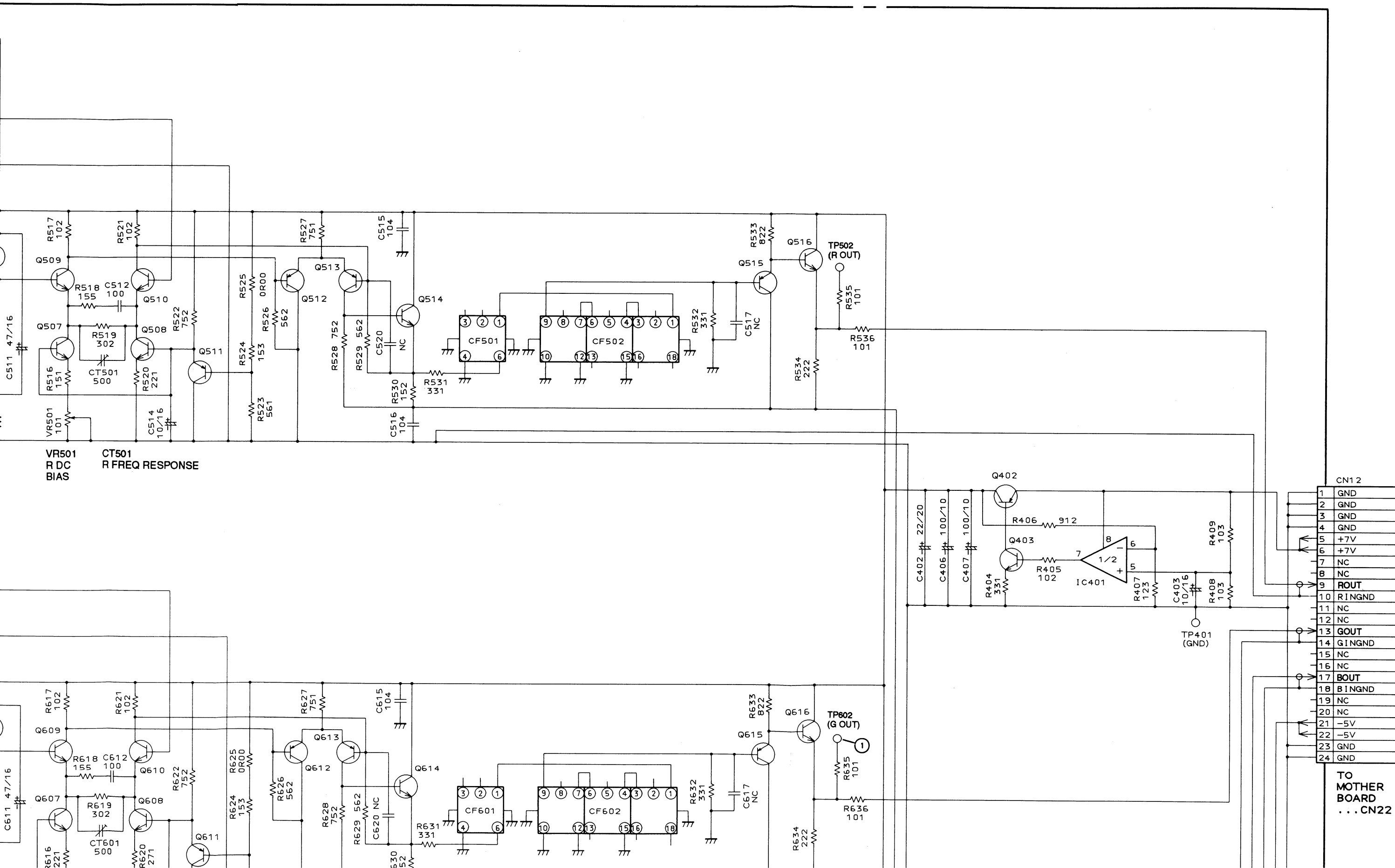
# PREAMP/ENCODER BOARD

(PREAMP SECTION)





## F PREAMP/ENCODER BOARD (PRE AMP SECTION) (WV-E550E)



Q63		A4	Q701	A2
Q64		A4	Q702	A2
Q65		A5	Q703	A2
Q66		A5	Q704	A2
Q67		A5	Q705	A2
Q68		A5	Q706	A3
Q69		A5	Q707	A3
Q70		A5	Q708	A3
Q71		A6	Q709	A3
Q72		A6	Q710	A3
Q73		A6	Q711	A3
Q74		A6	Q712	A3
Q75		A6	Q713	A3
Q76		A6	Q714	A4
Q77		C5	Q715	A4
Q78		D2	Q716	A4
Q79		D3	Q717	B2
			Q718	B2
			Q719	B2
			Q720	B2
			D1	D4
			D3	A2
			D5	A4
			D8	C5
			D9	B5

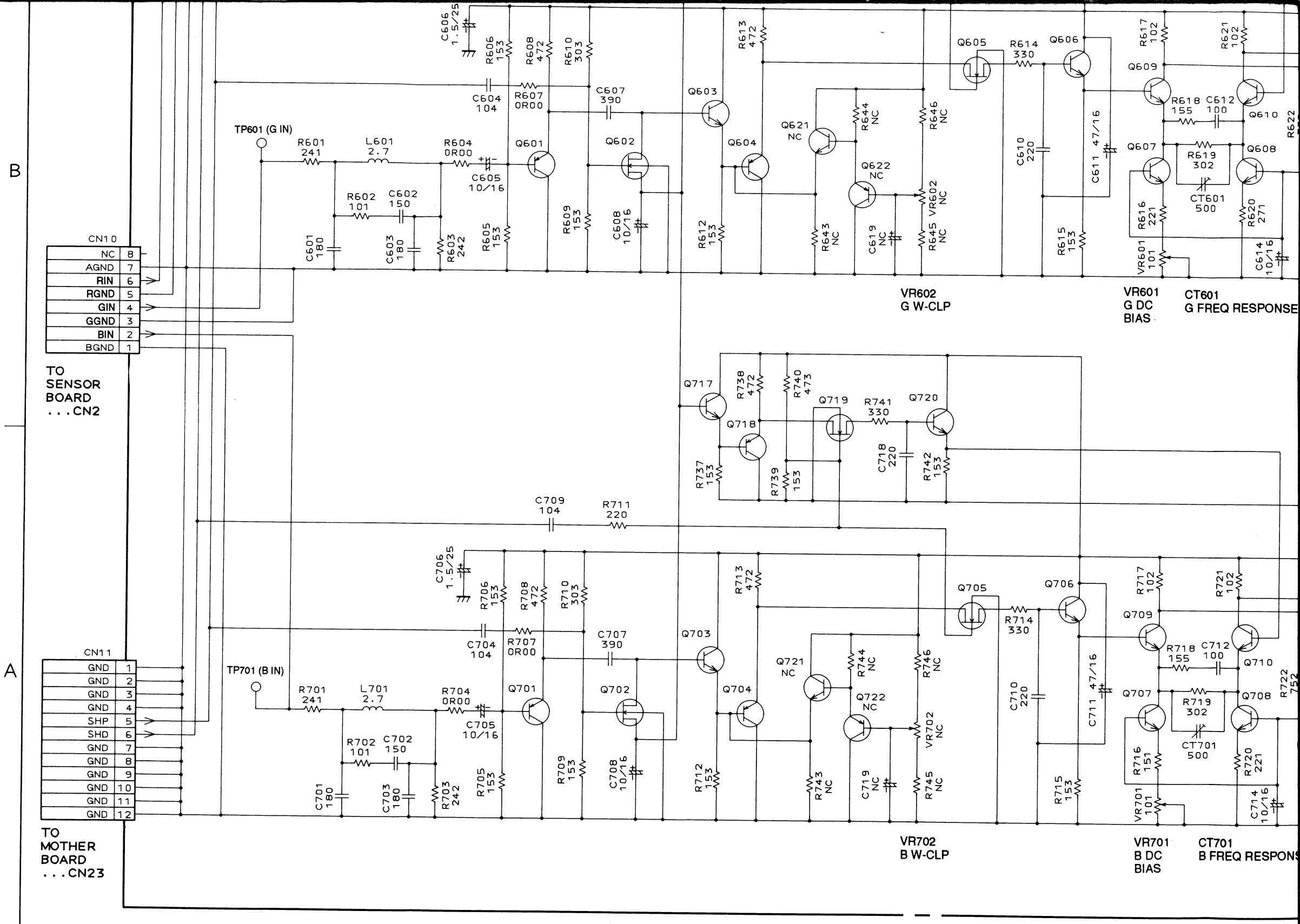
# PREAMP SECTION

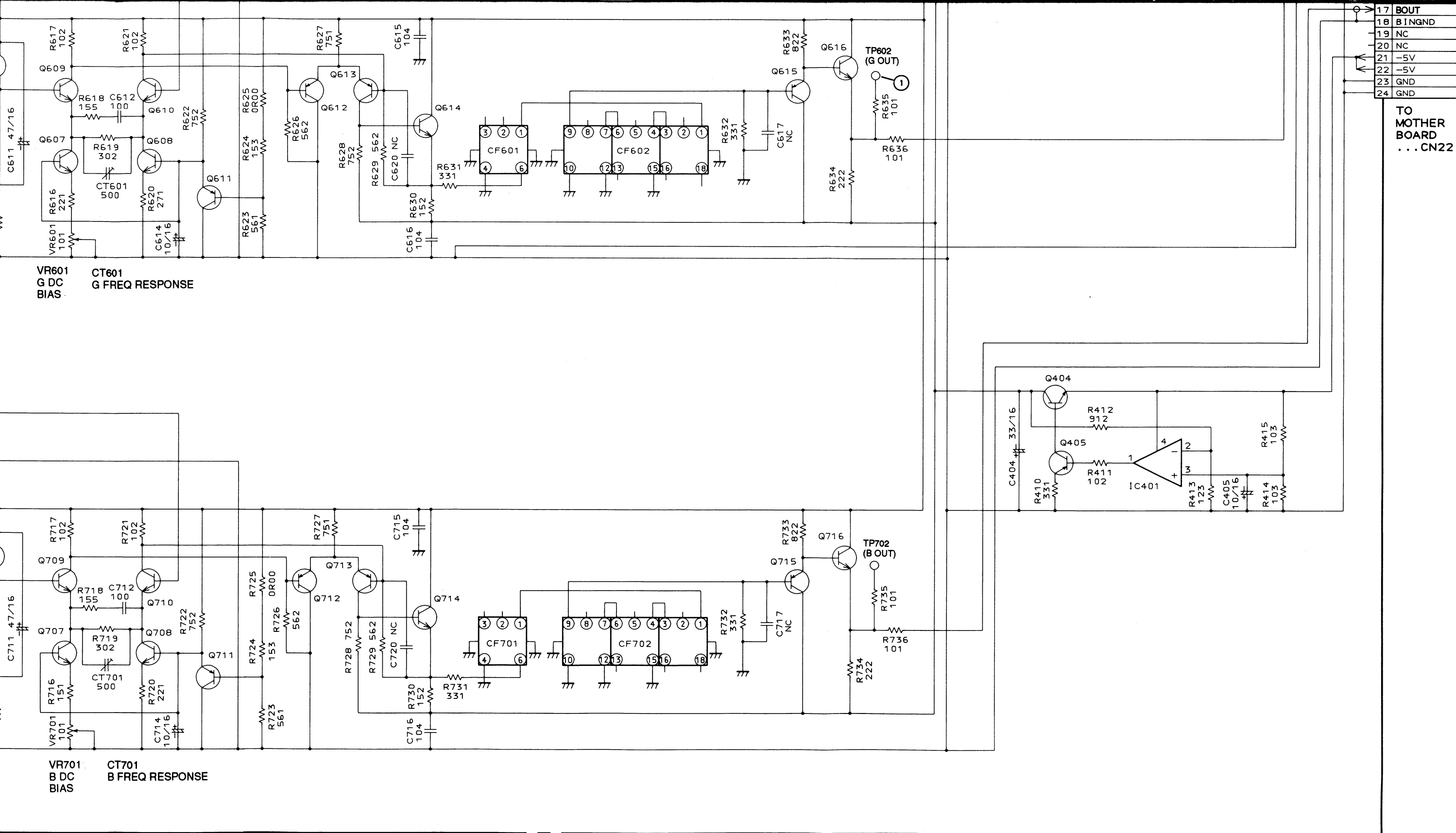
Q401	3.1	0	1.6
402	6.3	6.2	7.0
403	0.7	6.3	0.1
404	-4.5	-4.5	-5.2
405	-0.6	-4.5	0
501	3.1	0	3.8
504	3.0	0	3.7
506	3.6	6.2	2.9
507	0.9	2.1	0.3
508	0.9	2.2	0.3
509	2.9	4.1	2.1
510	2.9	4.1	2.2
511	0.2	0	0.9
512	4.1	0	4.8
513	4.1	0.8	4.8
514	0.8	6.2	0
515	0	-4.6	0.7
516	0.7	6.2	0
517	3.8	1.1	1.1
518	3.0	0	3.8
520	3.7	6.2	3.0
521	3.2	6.2	1.5
522	2.5	1.5	3.2
601	3.2	0	3.8
603	3.8	6.2	3.0
604	3.0	0	3.7
606	3.6	6.2	2.9
607	0.9	2.1	0.3
608	0.9	2.2	0.3
609	2.8	4.3	2.1
610	3.0	4.3	2.2

Q611	0.2	0	0.9
612	4.3	0	5.0
613	4.2	1.0	5.0
614	1.1	6.2	0.3
615	0.1	-4.6	0.8
616	0.8	6.2	0.1
617	3.8	0.2	3.1
618	3.1	0	3.8
620	3.8	6.2	3.0
621	2.9	1.6	3.0
622	2.2	0	2.9
701	3.1	0	3.8
703	3.8	6.2	3.0
704	3.0	0	3.6
706	3.6	6.2	2.9
707	0.9	2.1	0.3
708	0.9	2.2	0.3
709	2.9	4.1	2.1
710	3.0	4.1	2.2
711	0.2	0	0.9
712	4.1	0	4.8
713	4.1	1.0	4.8
714	1.1	6.2	0.3
715	0.1	-4.5	0.8
716	0.8	6.2	0
717	2.0	6.2	3.1
718	3.1	0	3.8
720	3.8	6.2	3.0
721	3.4	6.1	2.9
722	2.7	0	3.4

Pin 1	-0.6
2	-2.6
3	-2.6
4	-5.1
5	3.5
6	3.5
7	0.7
8	7.0

Q502	Q505	Q519	Q602	Q605	Q619	Q702	Q705	Q719
Pin 1	0	0	0	0	0	0	0	0
2	2.0	1.5	1.5	2.1	1.5	1.5	2.0	1.5
3	3.8	3.6	3.8	3.8	3.6	3.9	3.8	3.6
4	3.8	3.6	3.8	3.8	3.6	3.9	3.8	3.6



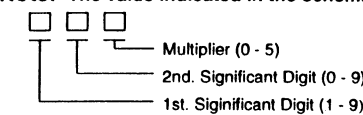


3

4

5

**Note:** The value indicated in the schematic diagram should be read as follows:



**<Example>**

For Resistor:

330  $\rightarrow 33 \times 10^0 = 33 \Omega$   
 561  $\rightarrow 56 \times 10^1 = 560 \Omega$   
 123  $\rightarrow 12 \times 10^3 = 12k \Omega$   
 0R00 =  $0 \Omega$

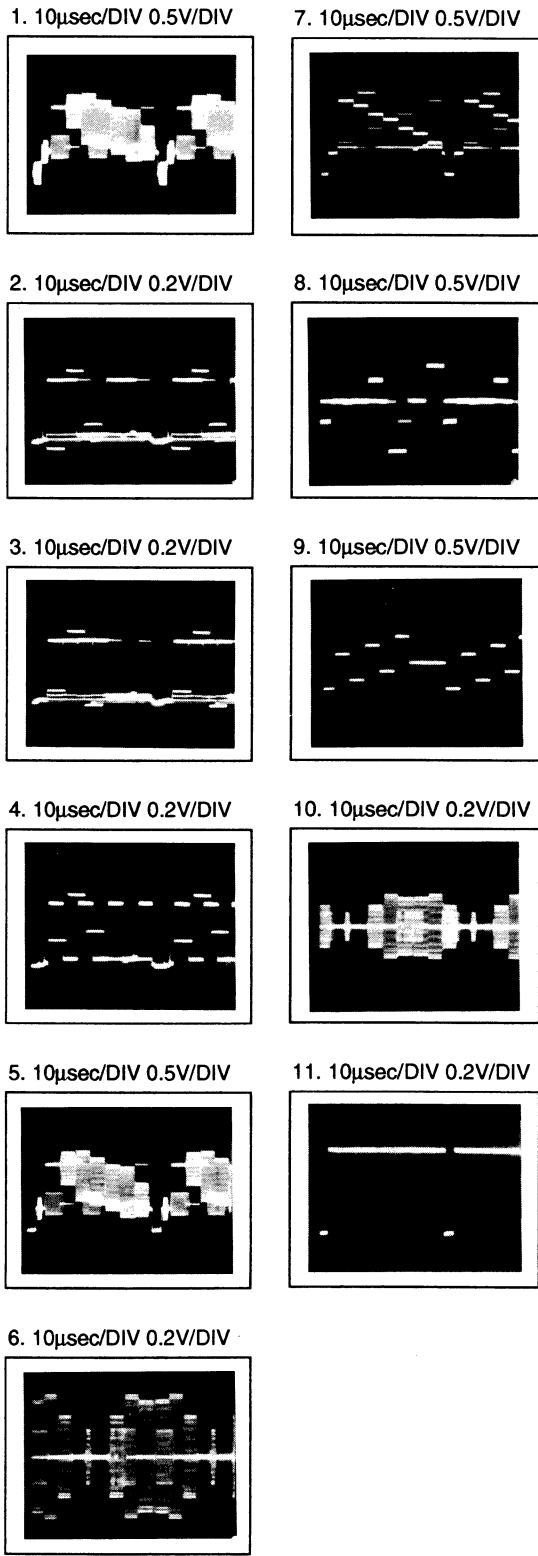
For Capacitor:

820  $\rightarrow 82 \times 10^0 = 82 pF$   
 102  $\rightarrow 10 \times 10^2 = 1000 pF = 0.001 \mu F$   
 104  $\rightarrow 10 \times 10^4 = 100000 pF = 0.1 \mu F$   
 The suffix attached to capacitance indicates a type of capacitor.

SCHEMATIC DIAGRAM OF PREAMP/ENCODER

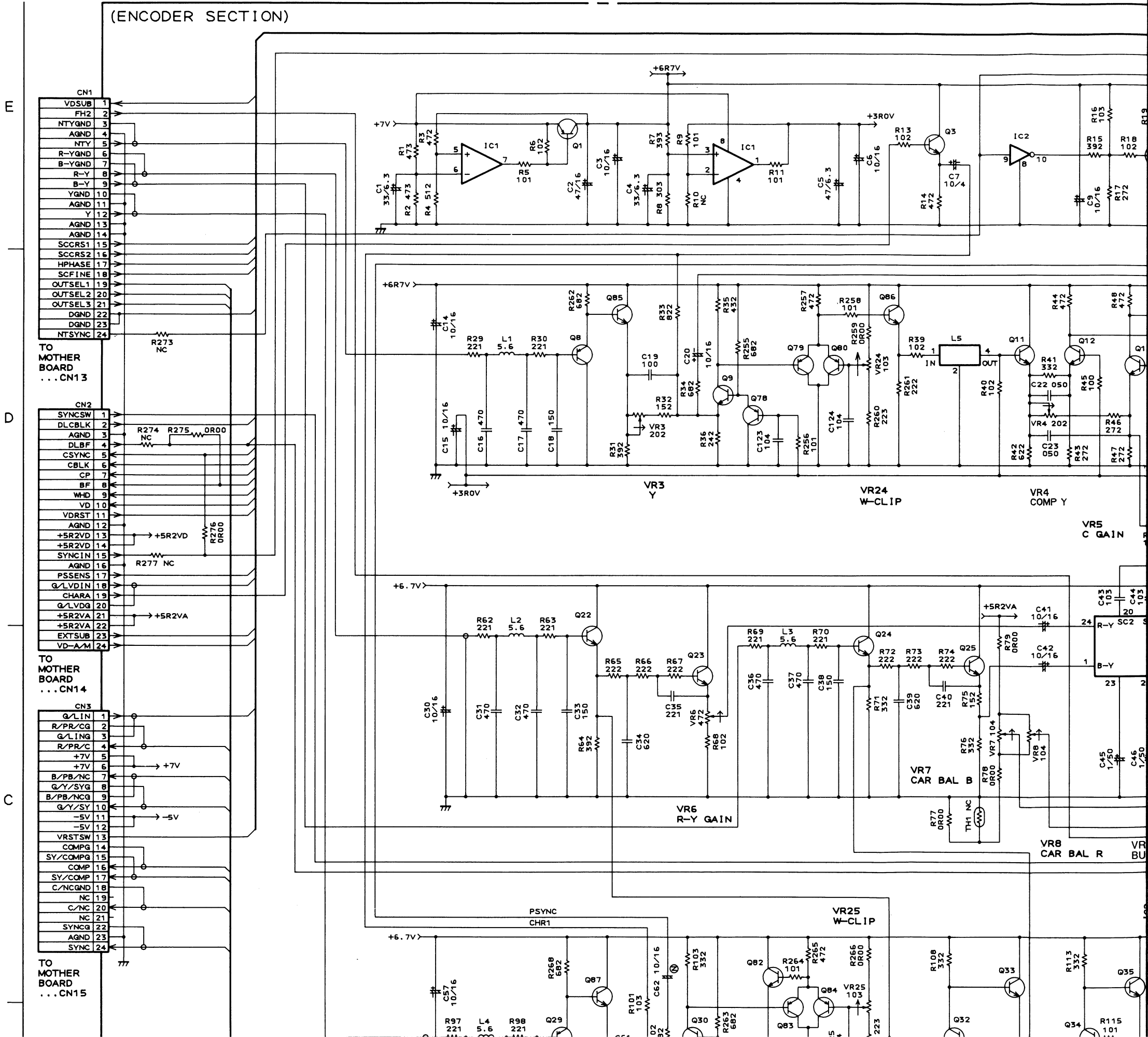
PREAMP/ENCODER BOARD  
(ENCODER SECTION)

ENCODER SECTION



< Index >  
ENCODER SECTION

IC1	E2	Q52	A2
IC2	C4, D5, E3, E4	Q53	A3
IC3	C4	Q54	A3
IC4	B5, C5	Q55	A3
IC5	R5	Q56	A3





# < Index > ENCODER SECTION

IC1	E2	Q52	A2
IC2	C4, D5, E3, E4	Q53	A3
IC3	B5, C5	Q54	A3
IC4	B5	Q55	A3
IC5	B4	Q56	A3
IC6	B5, B6	Q57	A3
IC8	B5, B6	Q58	A3
IC9	B6	Q59	A4
IC10	B6	Q60	A4
IC11	C4	Q61	A4
Q1	E2	Q62	A4
Q3	E3	Q63	A4
Q4	E4	Q64	A4
Q5	E4	Q65	A5
Q6	E4	Q66	A5
Q7	E4	Q67	A5
Q8	D2	Q68	A5
Q9	D2	Q69	A5
Q11	D3	Q70	A5
Q12	D3	Q71	A6
Q13	D3	Q72	A6
Q14	D4	Q73	A6
Q15	D4	Q74	A6
Q16	D4	Q75	A6
Q17	D4	Q76	A6
Q18	D4	Q77	C5
Q19	D4	Q78	D2
Q20	D4	Q79	D3
Q21	D4	Q80	D3
Q22	C2	Q81	B2
Q23	C2	Q82	C2
Q24	C3	Q83	B3
Q25	C3	Q84	B3
Q26	C5	Q85	D2
Q27	C5	Q86	D3
Q28	C5	Q87	C2
Q29	B2	D1	D4
Q30	B2	D3	A2
Q32	B3	D5	A4
Q33	C3	D8	C5
Q34	B3	D9	B5
Q35	C3		
Q36	C4		
Q42	B3		
Q44	B3		
Q46	B3		
Q47	A2		
Q48	A2		
Q49	A2		
Q50	A2		
Q51	A2		

## ENCODER SECTION

	B	C	E
Q16	-0.1	5.2	-0.8
17	-0.7	2.6	-0.8
18	2.6	5.2	1.8
20	0.4	5.2	-0.2
21	-0.8	-5.2	-0.2
36	2.3	6.7	1.7
71	-0.1	5.2	-0.8
72	-0.1	1.3	-0.8
73	1.3	5.2	0.5
75	0.5	5.2	-0.1
76	-0.7	-5.2	-0.1
66	4.6	-0.1	3.8

	Q19	Q74
Pin 1	-1.9	-0.1
2	0.4	0.5
3	-0.8	-0.7
4	-0.2	-0.1
5	-0.8	-0.7
6	0.4	0.5

VR1SW	13
COMPQ	14
SY/COMPQ	15
COMP	16
SY/COMP	17
C/NCGND	18
NC	19
C/NC	20
NC	21
SY/NC	22
AGND	23
SY/NC	24

TO MOTHER BOARD  
...CN15

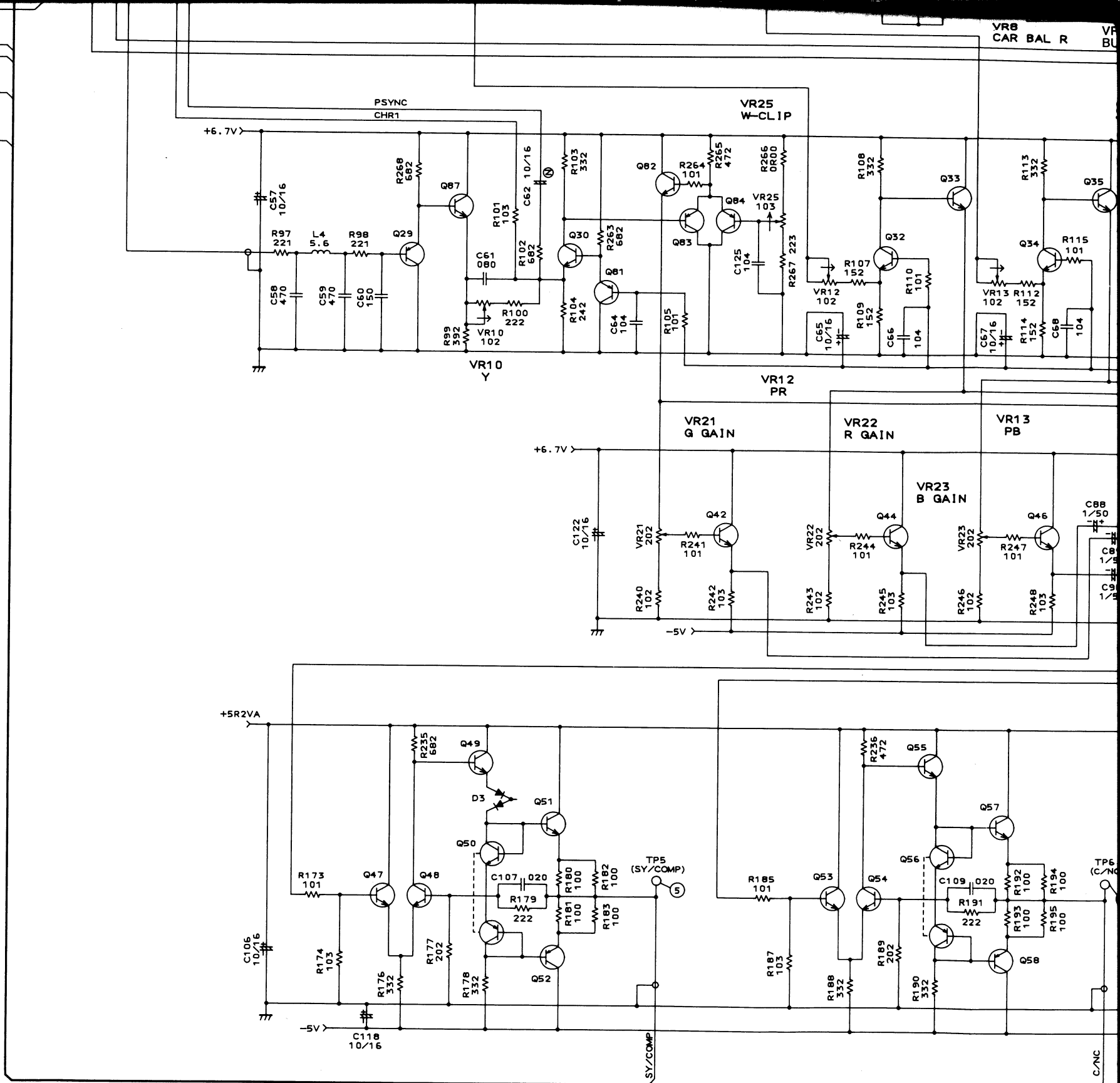
B

A

1

2

3





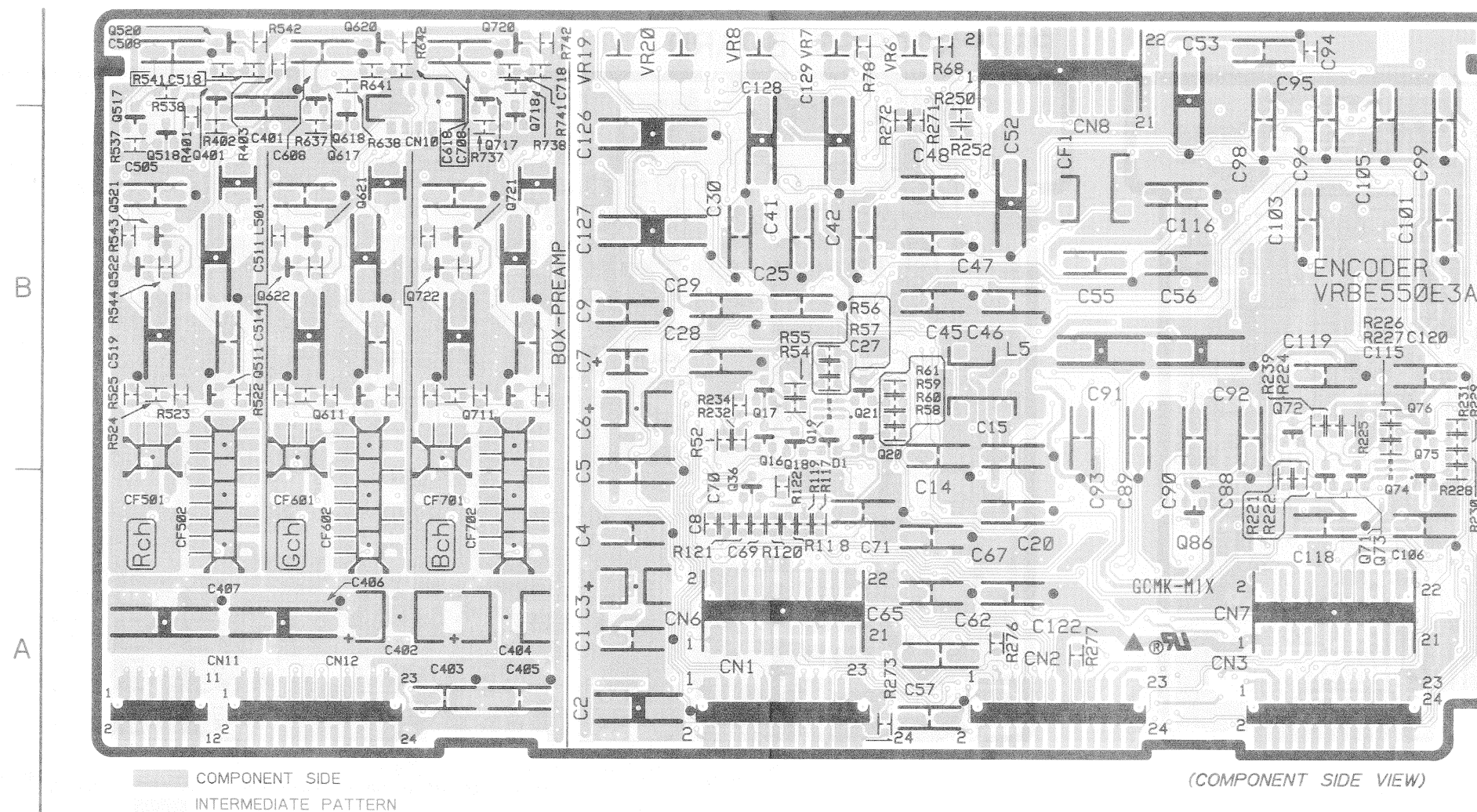


# CONDUCTOR VIEW OF PREAMP/ENCODER BOARD (WV-E550E)

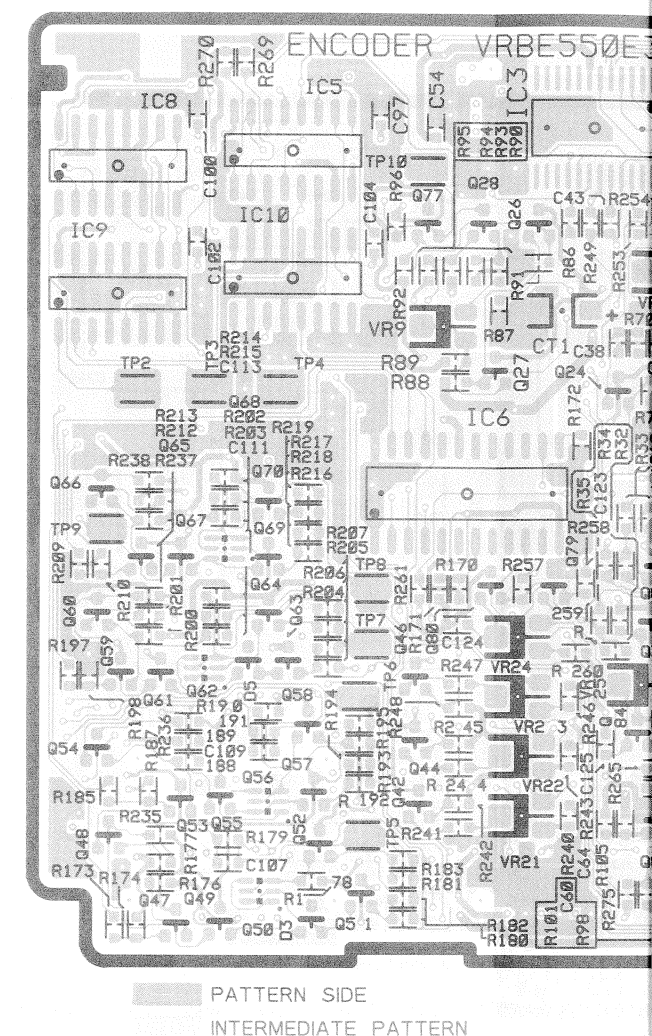
## < Index > PREAMP SECTION

IC401	A7	Q704	B7
Q401	C1	Q705	B7
Q402	A8	Q706	B7
Q403	A8	Q707	B7
Q404	A7	Q708	B8
Q405	A7	Q709	B7
Q501	B8	Q710	B8
Q502	C8	Q711	B2
Q503	B8	Q712	B7
Q504	B8	Q713	B7
Q505	B8	Q714	A8
Q506	B8	Q715	A7
Q507	B8	Q716	A8
Q508	B8	Q717	C2
Q509	B8	Q718	B2
Q510	B8	Q719	C7
Q511	B1	Q720	C2

## PREAMP/ENCODER BOARD



## PREAMP/ENCODER BOARD



## < Index > ENCODER SECTION

IC1	A7	Q1	A7	Q15	B7	Q27	B6	Q48	A5	Q60	A5	Q72	B4	Q84	A6
IC2	A7	Q3	B7	Q16	B2	Q28	B6	Q49	A5	Q61	A5	Q73	A4	Q85	B6
IC3	C6	Q4	B7	Q17	B2	Q29	A6	Q50	A5	Q62	A5	Q74	B4	Q86	A4
IC4	C7	Q5	B7	Q18	B3	Q30	A6	Q51	A5	Q63	A5	Q75	A4	Q87	A6
IC5	B5	Q6	B7	Q19	B3	Q32	A7	Q52	A5	Q64	A5	Q76	B4	D1	B3
IC6	B6	Q7	B7	Q20	B3	Q33	A7	Q53	A5	Q65	B5	Q77	B5	D3	A5
IC8	B5	Q8	B6	Q21	B3	Q34	A6	Q54	A5	Q66	B5	Q78	A6	D5	A5
IC9	B5	Q9	A6	Q22	B6	Q35	A6	Q55	A5	Q67	B5	Q79	B6	D8	B7
IC10	B5	Q11	B6	Q23	B7	Q36	A2	Q56	A5	Q68	B5	Q80	B6	D9	B7
IC11	C7	Q12	B7	Q24	B6	Q42	A5	Q57	A5	Q69	B5	Q81	A6		
		Q13	B7	Q25	B6	Q44	A5	Q58	A5	Q70	B5	Q82	A6		
		Q14	B7	Q26	B6	Q47	A5	Q59	A5	Q71	A4	Q83	A6		



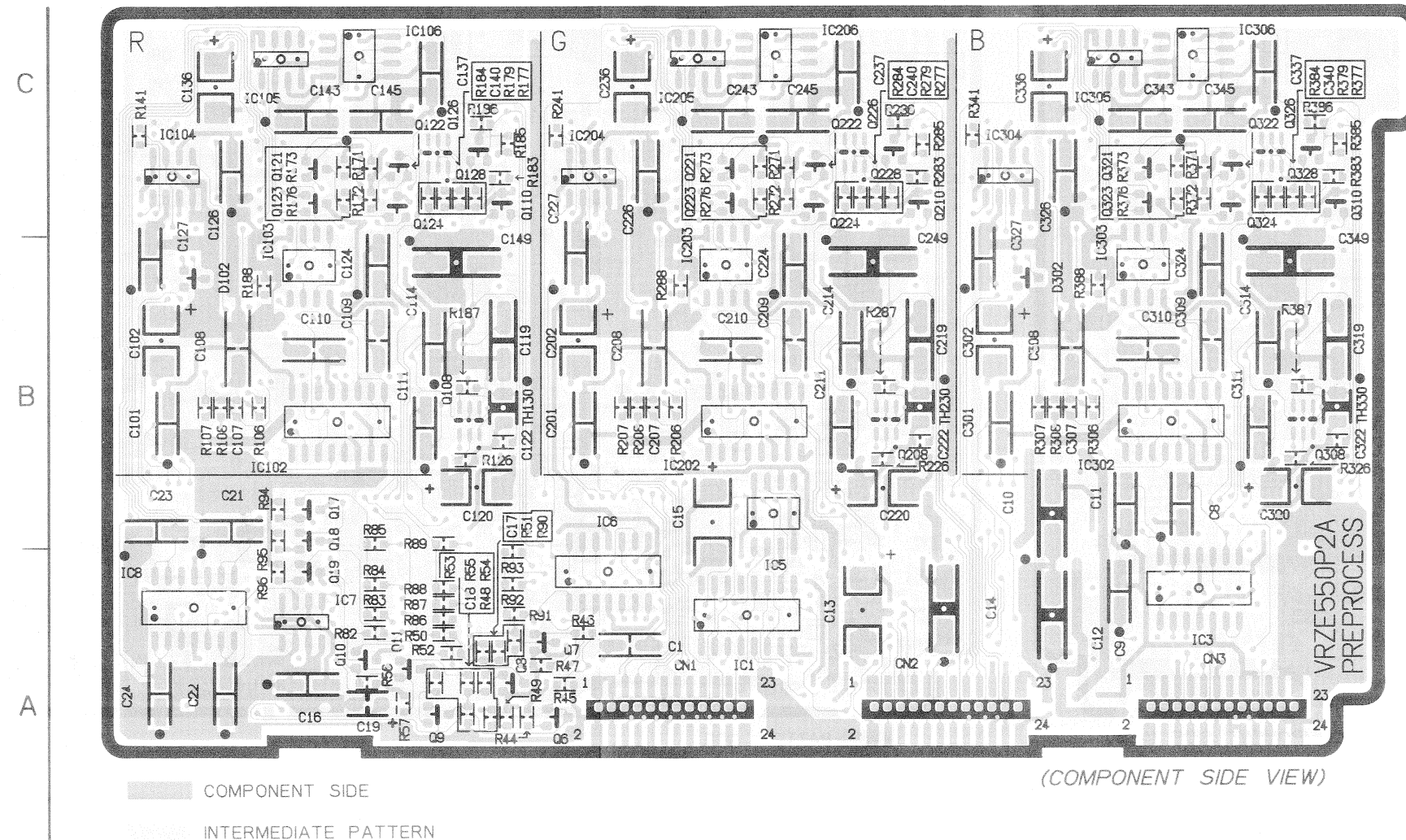


# CONDUCTOR VIEW OF PREPROCESS BOARD (WV-E550E)

## < Index> PREPROCESS BOARD

IC1	A3	Q201	B8
IC3	A4	Q202	B8
IC5	B3	Q203	B8
IC6	A2	Q204	B7
IC7	A1	Q205	B7
IC8	A1	Q206	B7
IC101	B9	Q207	B7
IC102	B1	Q208	B3
IC103	B1	Q210	C3
IC104	C1	Q211	B7
IC105	C1	Q212	C8
IC106	C2	Q213	C8
IC201	B7	Q214	C7
IC202	B3	Q215	C8
IC203	B3	Q216	C7
IC204	C2	Q217	C8
IC205	C3	Q218	C7
IC206	C3	Q219	C8
IC301	B6	Q220	C7
IC302	B4	Q221	C3
IC303	B4	Q222	C3
IC304	C4	Q223	C3
IC305	C4	Q224	C3
IC306	C4	Q225	C7
Q1	B5	Q226	C3
Q2	A6	Q227	C7
Q3	A6	Q228	C3
Q4	A7	Q301	B6
Q5	A7	Q302	B6
Q6	A2	Q303	B6
Q7	A2	Q304	B6
Q8	A2	Q305	B5
Q9	A2	Q306	B6
Q10	A1	Q307	B5
Q11	A2	Q308	B5
Q12	A9	Q310	O5
Q13	A9	Q311	B6
Q14	A9	Q312	C6
Q15	A9	Q313	O6
Q16	A9	Q314	O6
Q17	B1	Q315	O6
Q18	B1	Q316	O6
Q19	A1	Q317	O6
Q101	B9	Q318	O6
Q102	B9	Q319	O6
Q103	B9	Q320	O6
Q104	B8	Q321	C4
Q105	B8	Q322	C4
Q106	B8	Q323	C4
Q107	B8	Q324	C4
Q108	B2	Q325	C5
Q110	C2	Q326	C4
Q111	B9	Q327	C6
Q112	C9	Q328	C5
Q113	C9	D2	A7
Q114	C9	D101	B9
Q115	C9	D102	B1
Q116	C9	D201	B8
Q117	C9	D301	B6
Q118	C9	D302	B4
Q119	C9		
Q120	C9		
Q121	C1		
Q122	C2		
Q123	C1		
Q124	C2		
Q125	C8		
Q126	C2		
Q127	C8		
Q128	C2		

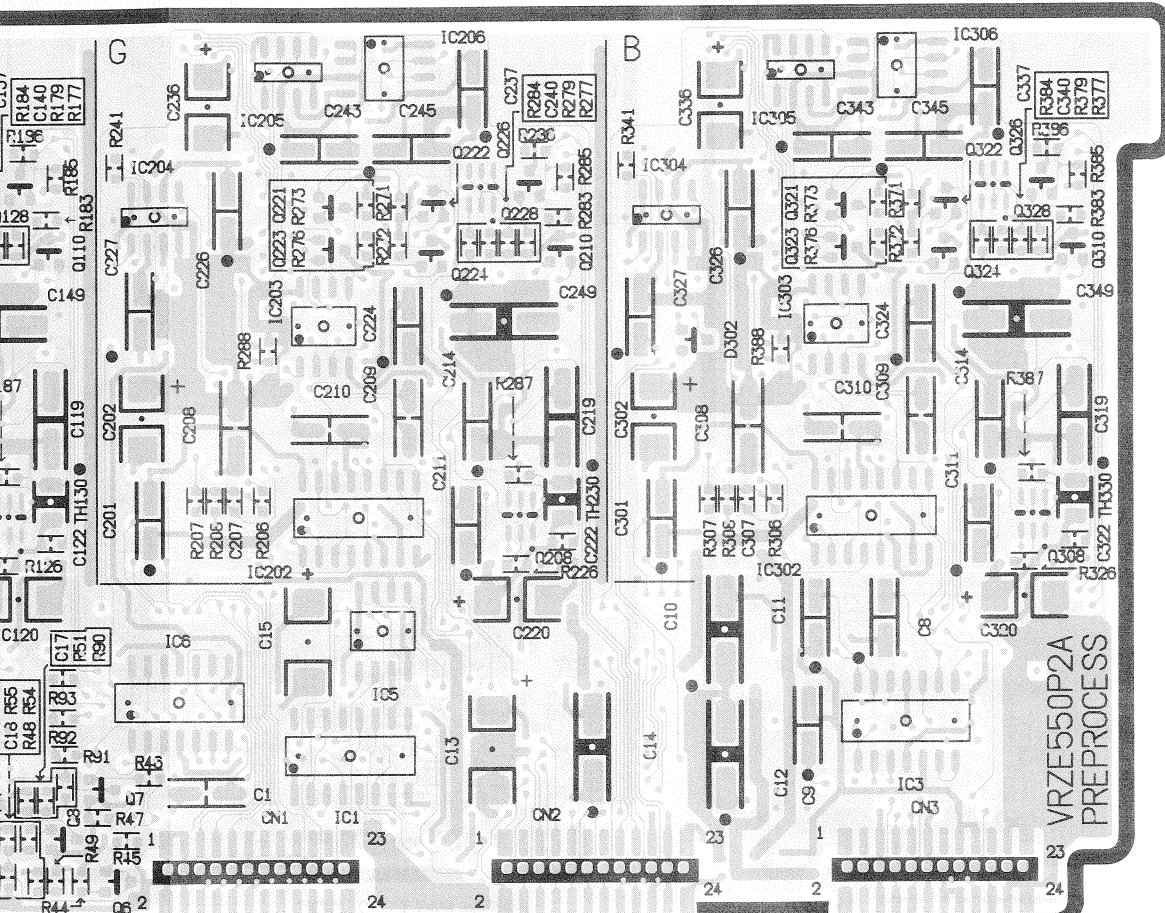
PREPROCESS BOARD





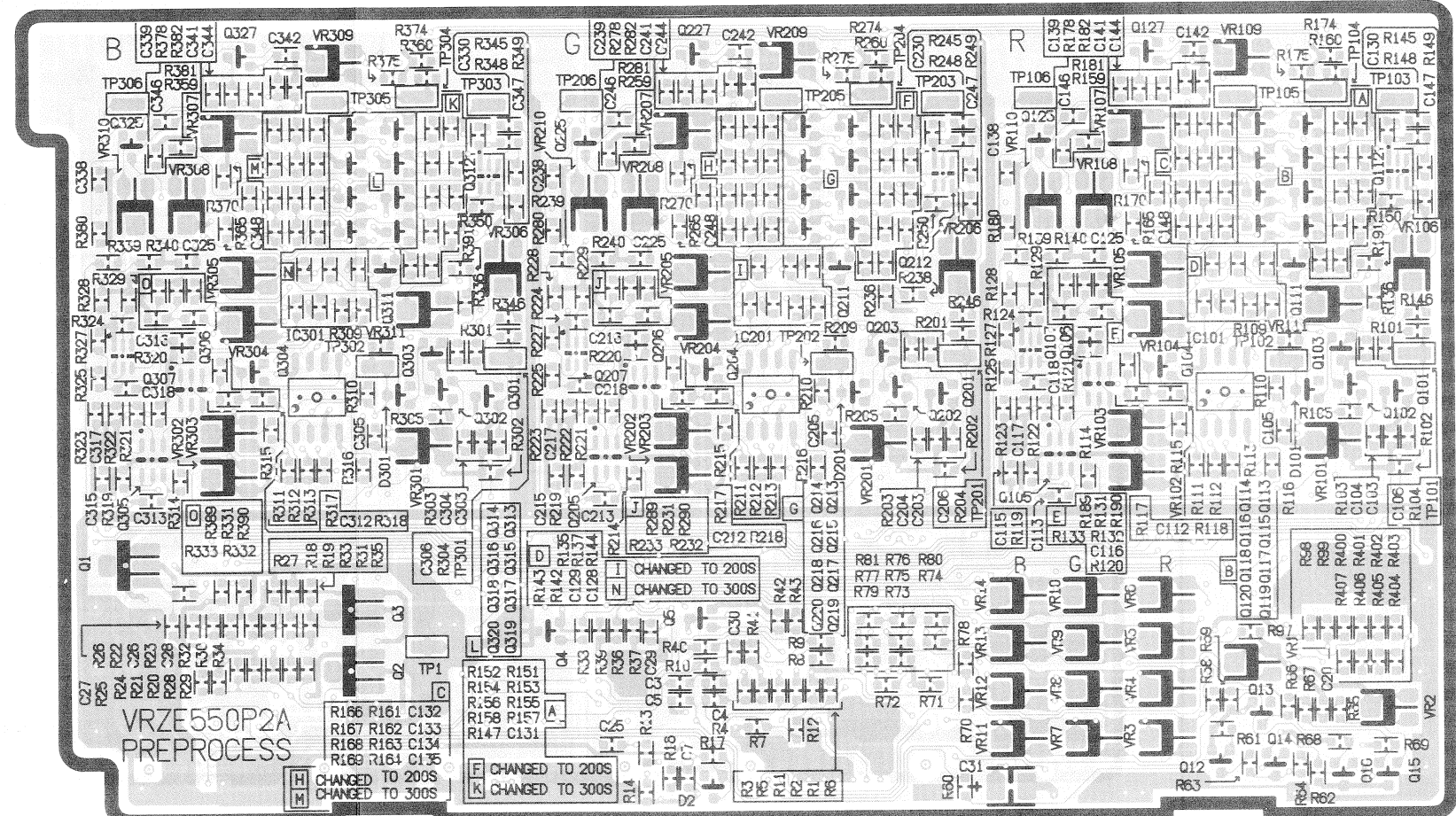
# CONDUCTOR VIEW OF PREPROCESS BOARD (WV-E550E)

ARD



(COMPONENT SIDE VIEW)

## PREPROCESS BOARD



(PATTERN SIDE VIEW)

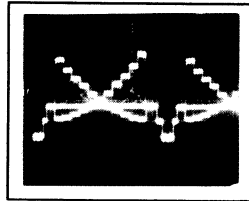
PATTERN SIDE

INTERMEDIATE PATTERN

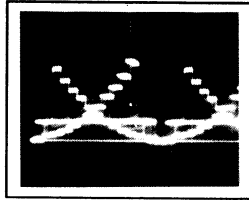
## SCHEMATIC DIAGRAM OF PREPROCES

## PREPROCESS BOARD

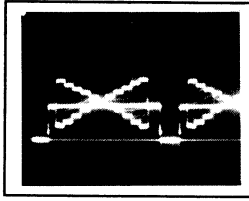
1. 10 $\mu$ sec/DIV 0.1V/DIV



2. 10 $\mu$ sec/DIV 0.2V/DIV



3. 10 $\mu$ sec/DIV 0.5V/DIV

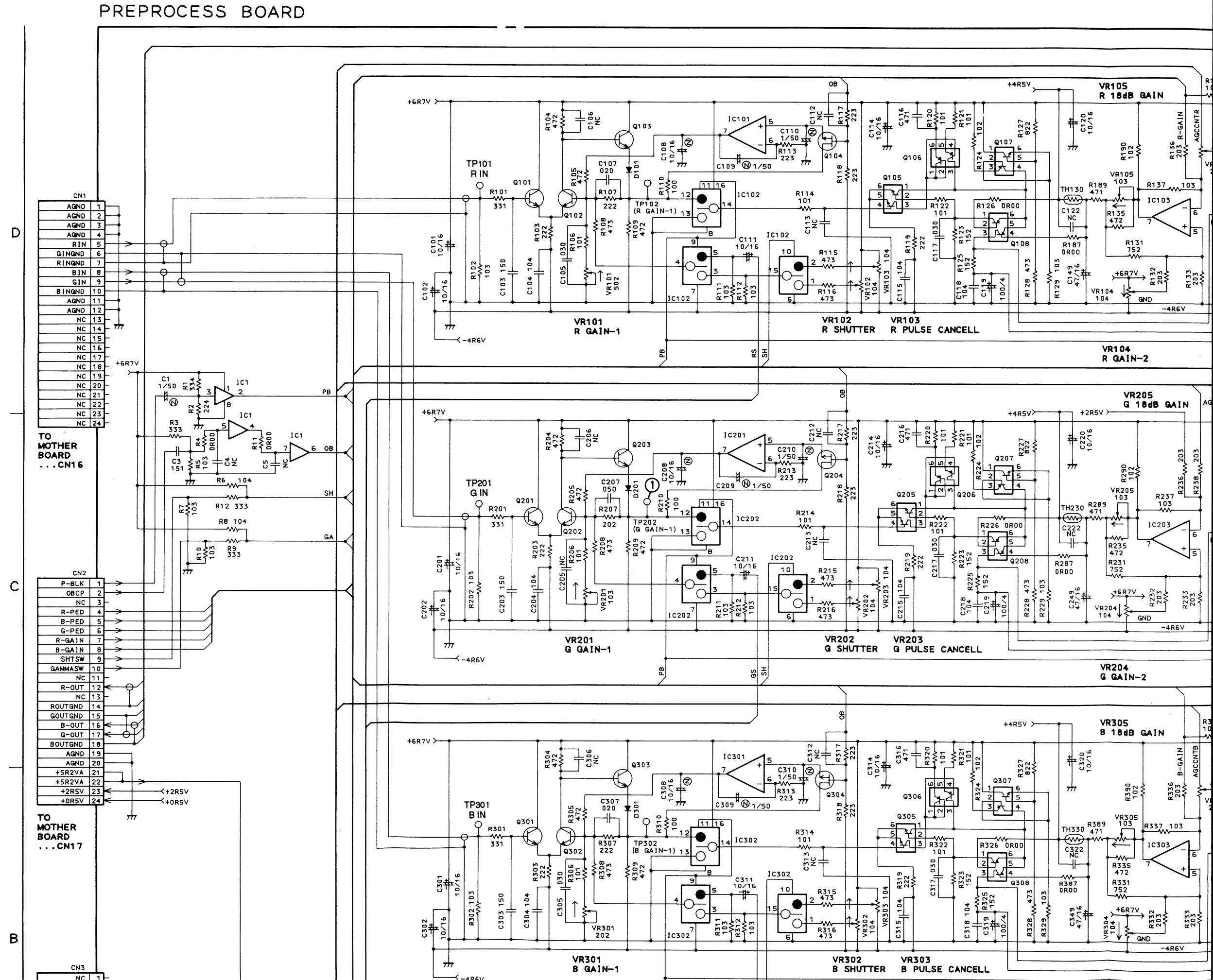


**< Index>  
PREPROCESS  
BOARD**

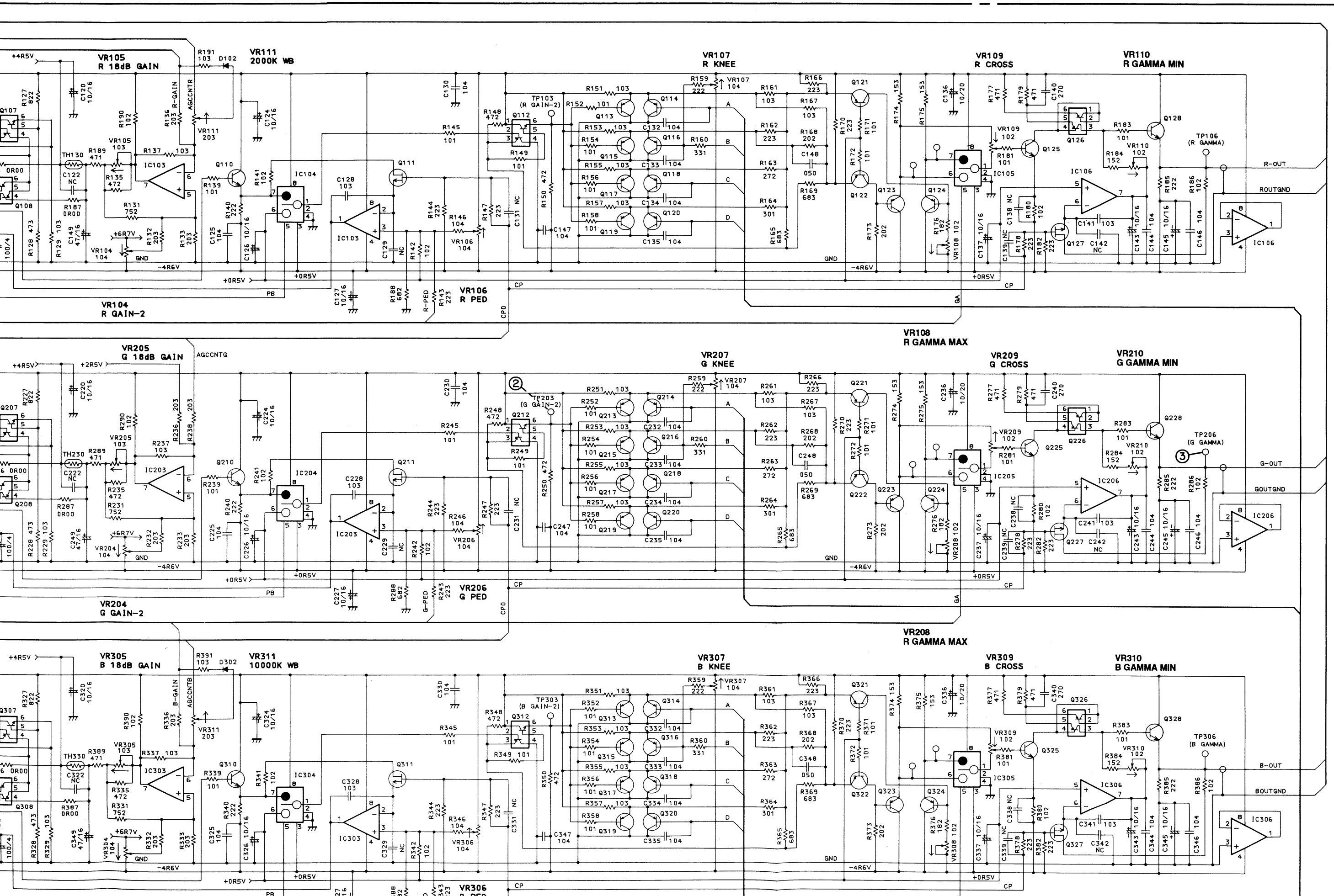
IC1	A1, C1, D1
IC3	A2
IC5	A3
IC6	A5
IC7	A6
IC8	A7
IC101	A3
IC102	D2, D3
IC103	D4
IC104	D4
IC105	D6
IC106	D7
IC201	A3, C3
IC202	C2, C3
IC203	C4
IC204	C4
IC205	C6
IC206	C7
IC301	A3, B3
IC302	B2, B3
IC303	B4
IC304	B4
IC305	B6
IC306	B7
Q1	B2
Q2	A2
Q3	B3
Q4	A3
Q5	B4
Q6	B4
Q7	A4
Q8	A4
Q9	B4
Q10	A4
Q11	A4
Q12	A4
Q13	A4
Q14	A5
Q15	A5
Q16	A5
Q17	A6
Q18	A6
Q19	A6
Q101	D2
Q102	D2
Q103	D2
Q104	D3
Q105	D3
Q106	D3

Q201	C2
Q202	C2
Q203	C2
Q204	C3
Q205	C3
Q206	C3
Q207	C3
Q208	C3
Q210	C4
Q211	C4
Q212	C5
Q213	C5
Q214	C5
Q215	C5
Q216	C5
Q217	C5
Q218	C5
Q219	C5
Q220	C5
Q221	C6
Q222	C6
Q223	C6
Q224	C6
Q225	C6
Q226	C6
Q227	C6
Q228	C7
Q301	B2
Q302	B2
Q303	B2
Q304	B3
Q305	B3
Q306	B3
Q307	B3
Q308	B3
Q310	B4
Q311	B4
Q312	B5
Q313	B5
Q314	B5
Q315	B5
Q316	B5
Q317	B5
Q318	B5
Q319	B5
Q320	B5
Q321	B6
Q322	B6
Q323	B6

C2  
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B6



# M OF PREPROCESS BOARD (WV-E550E)



Q6	B3	Q303	B2
Q7	A4	Q304	B3
Q8	A4	Q305	B3
Q9	B4	Q306	B3
Q10	A4	Q307	B3
Q11	A4	Q308	B3
Q12	A4	Q310	B4
Q13	A4	Q311	B4
Q14	A5	Q312	B5
Q15	A5	Q313	B5
Q16	A5	Q314	B5
Q17	A6	Q315	B5
Q18	A6	Q316	B5
Q19	A6	Q317	B5
Q101	D2	Q318	B5
Q102	D2	Q319	B5
Q103	D2	Q320	B5
Q104	D3	Q321	B6
Q105	D3	Q322	B6
Q106	D3	Q323	B6
Q107	D3	Q324	B6
Q108	D4	Q325	B6
Q110	D4	Q326	B6
Q111	D4	Q327	B6
Q112	D5	Q328	B7
Q113	D5	D2	A1
Q114	D5	D101	D2
Q115	D5	D102	D4
Q116	D5	D201	C2
Q117	D5	D301	B2
Q118	D5	D302	C4
Q119	D5		
Q120	D5		
Q121	D6		
Q122	D6		
Q123	D6		
Q124	D6		
Q125	D6		
Q126	D6		
Q127	D6		
Q128	D7		

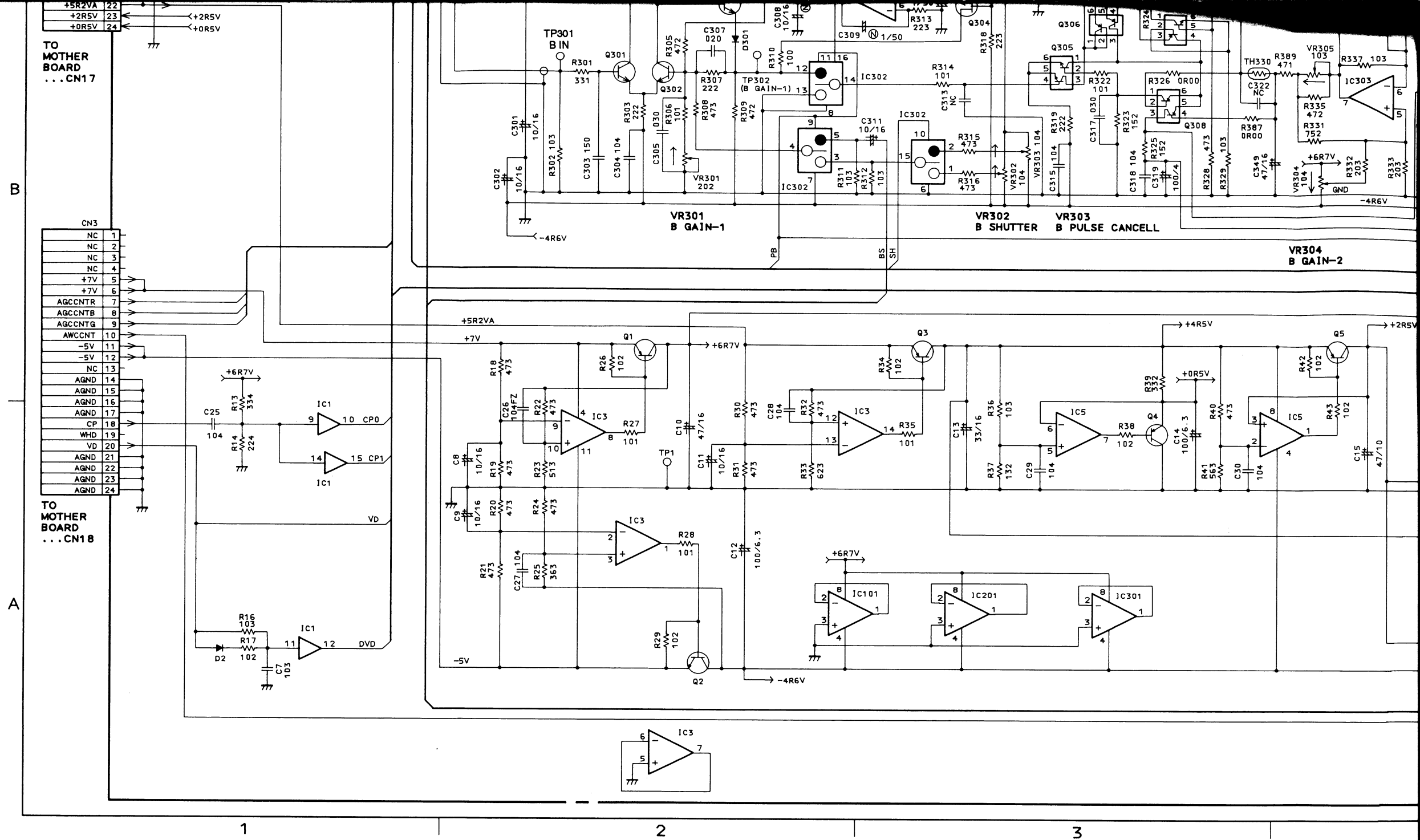
Q1	6.3	6.7	7.0
2	-4.5	-4.5	-5.2
3	4.5	4.5	5.2
4	-0.2	0	0.5
5	3.9	2.5	4.6
6	5.8	5.8	6.5
7	1.0	4.1	2.5
8	1.0	3.1	2.5
9	5.8	3.2	6.4
10	4.1	6.7	3.8
11	3.2	6.7	2.6
12	0.9	0	2.5
13	0.9	4.3	2.5
14	5.9	0	6.4
15	4.8	0	3.8
16	2.9	-0.2	2.3
17	2.5	6.7	1.9
18	2.5	6.7	1.9
19	2.3	6.7	6.7
101	0	6.7	-0.7
102	0	1.3	-0.7
103	1.3	6.7	0.6
104	0	-2.2	0
110	1.9	6.7	1.1
111	0.6	-2.2	0.7
113	0	0	1.3
114	2.1	0	1.3
115	0.6	0	1.3
116	1.1	0	1.3
117	0.6	0	1.3
118	0.8	0	1.3
119	0.6	0	1.3
120	0.6	0	1.3
121	0.5	-3.6	1.2
122	0.5	-4.0	1.2
123	-3.5	-4.6	-2.9
124	-3.6	-4.6	-2.9
125	-2.9	5.6	-3.8
127	0.5	-2.2	1.1
128	2.3	6.7	1.5

Q201	0	6.7	-0.6
202	0.1	1.3	-0.6
203	1.3	6.7	0.6
204	0	-2.2	0
210	2.1	6.7	1.3
211	0.6	-2.2	0.8
213	0.6	0	1.3
214	2.1	0	1.3
215	0.6	0	1.3
216	1.2	0	1.3
217	0.6	0	1.3
218	0.8	0	1.3
219	0.6	0	1.3
220	0.6	0	1.3
221	0.5	-3.2	1.2
222	0.5	-4.0	1.2
223	-3.5	-4.6	-2.8
224	-3.2	-4.6	-2.5
225	-2.9	5.6	-3.6
227	0.5	2.2	1.3
228	2.4	6.7	1.6
301	0	6.7	-0.7
302	0	1.4	-0.7
303	1.3	6.7	0.6
304	0	-2.2	0
310	2.0	6.7	1.3
311	0.6	-2.2	1.1
313	0.7	0	1.4
314	2.1	0	1.4
315	0.7	0	1.4
316	1.2	0	1.4
317	0.7	0	1.4
318	0.8	0	1.4
319	0.7	0	1.4
320	0.6	0	1.4
321	0.5	-3.2	1.2
322	0.5	-3.5	1.2
323	-3.5	-4.6	-2.8
324	-3.2	-4.6	-2.5
325	-2.9	5.6	-3.6
327	0.5	-2.2	1.6
328	2.4	6.7	1.7

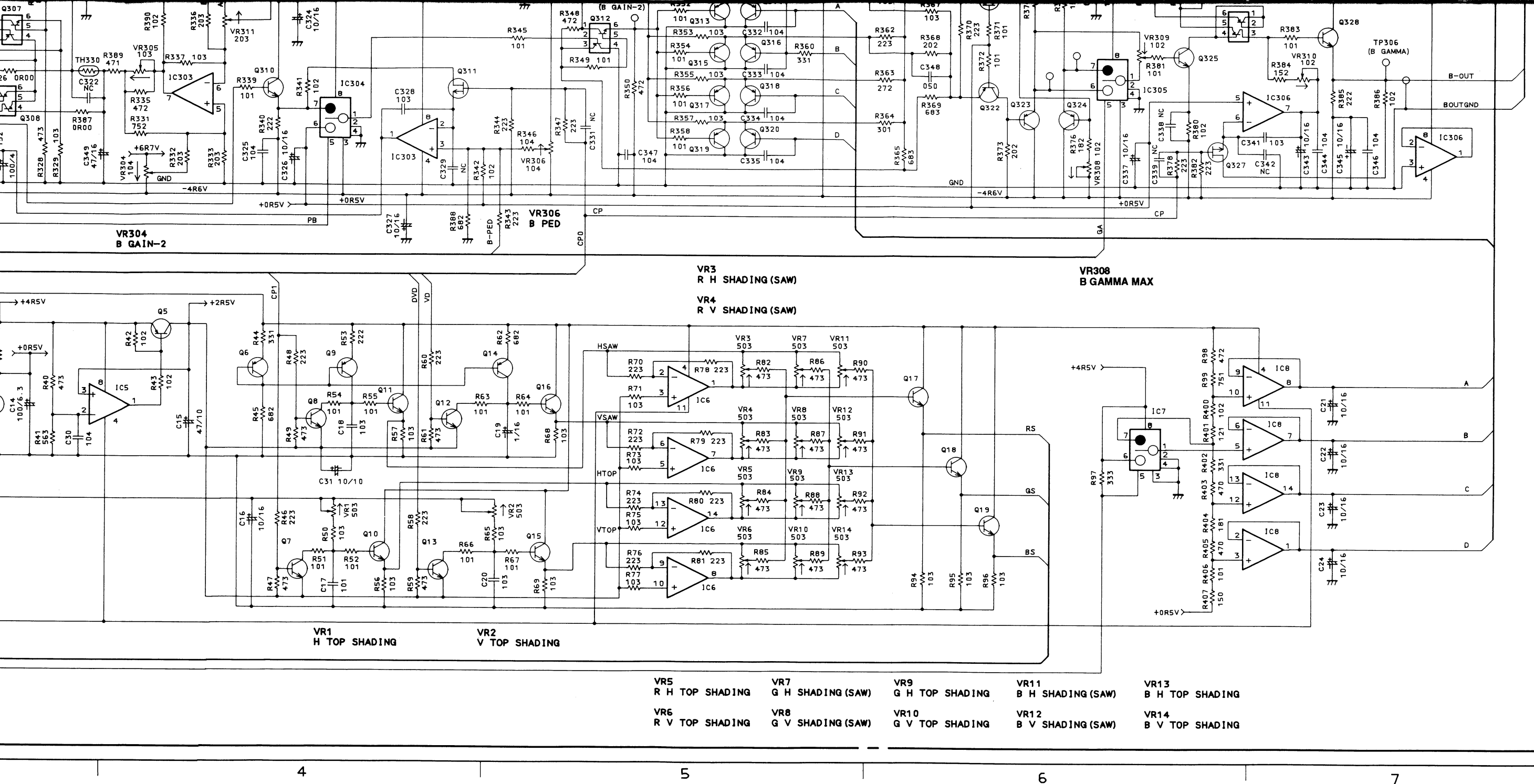
# PREPROCESS BOARD

Pin 1	IC5	IC6	IC7	IC8	IC101	IC201	IC301
2	2.5	0	0	0.6	5.5	5.5	5.5
3	2.5	2.5	0	0	0	0.3	0
4	0	6.7	0	0	-4.6	-4.6	-4.6
5	0	2.5	0	0	0	0	0
6	0	2.5	4.6	0	0	0	0
7	0	0	1.2	0	0.4	0.4	0.8
8	4.6	1.3	4.6	0	6.8	6.8	6.7
9		2.5		2.1			
10		2.5		2.1			
11		-4.6		-4.6			
12		2.5		0.8			
13		2.5		0			
14		1.3		0.8			

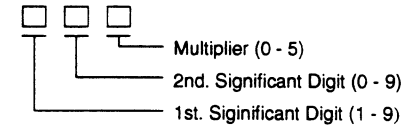
	Q105	Q106	Q107	Q108	Q112	Q126	Q205	Q206	Q207	Q208	Q212	Q226	Q305	Q306	Q307	Q308	Q312	Q326
Pin 1	5.2	6.0	6.8	5.2	6.7	5.4	5.2	6.0	6.7	0	6.7	5.4	5.2	6.0	6.7	0.1	6.7	5.5
2	0	6.0	5.1	5.2	0.7	5.4	0	6.0	5.2	4.6	0.8	5.4	0.1	6.0	5.2	4.6	1.1	5.5
3	6.0	5.2	5.7	4.5	1.3	2.3	6.0	5.2	5.8	1.6	1.4	2.4	6.0	5.2	5.7	1.9	1.7	2.4
4	0	6.0	5.2	1.4	0	5.5	0	0	5.2	4.5	0	5.4	0.1	6.0	5.2	4.5	0	5.5
5	-0.7	6.7	5.7	4.6	1.3	6.2	-0.7	1.8	5.7	5.2	1.4	6.2	-0.6	6.7	5.7	5.2	1.7	6.2
6	-0.7	6.7	5.1	0	0.7	6.2	-0.7	6.7	5.2	5.2	0.8	6.2	-0.6	6.7	5.2	5.2	1.1	6.2







Note: The value indicated in the schematic diagram should be read as follows:



<Example>

For Resistor:  
 330 → 33 × 10<sup>0</sup> = 33 Ω  
 561 → 56 × 10<sup>1</sup> = 560 pF  
 123 → 12 × 10<sup>3</sup> = 12k Ω  
 0R00 = 0 Ω

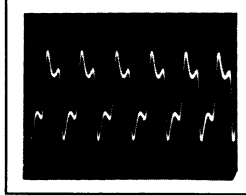
For Capacitor:  
 820 → 82 × 10<sup>0</sup> = 82 pF  
 102 → 10 × 10<sup>2</sup> = 1000 pF = 0.001 μF  
 104 → 10 × 10<sup>4</sup> = 100000 pF = 0.1 μF  
 The suffix attached to capacitance indicates a type of capacitor.

# SCHEMATIC DIAGRAM OF DIGITAL PROCESS BOARD

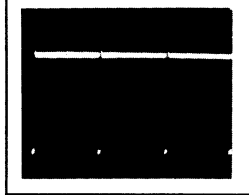
## DIGITAL PROCESS BOARD

### DIGITAL PROCESS BOARD

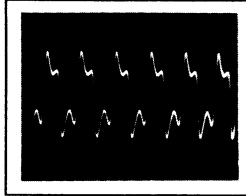
1. 20nsec/DIV 2V/DIV



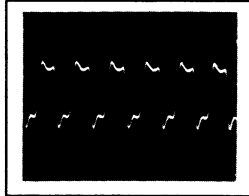
8. 5msec/DIV 1V/DIV



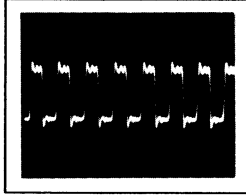
2. 20nsec/DIV 2V/DIV



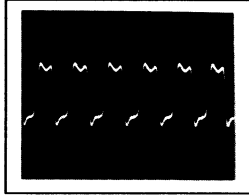
9. 20nsec/DIV 2V/DIV



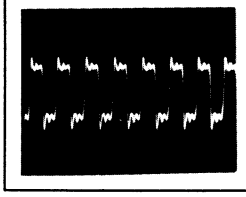
3. 50nsec/DIV 2V/DIV



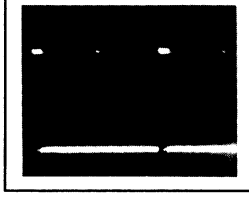
10. 20nsec/DIV 2V/DIV



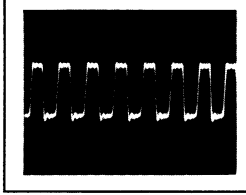
4. 50nsec/DIV 2V/DIV



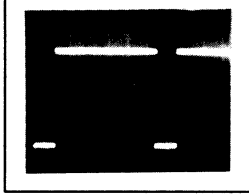
11. 10μsec/DIV 1V/DIV



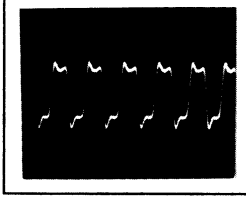
5. 50nsec/DIV 2V/DIV



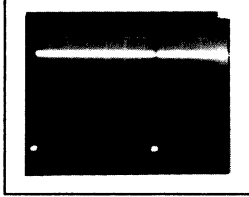
12. 10μsec/DIV 1V/DIV



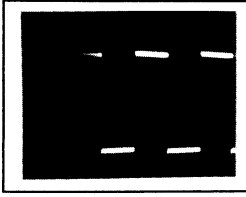
6. 20nsec/DIV 2V/DIV



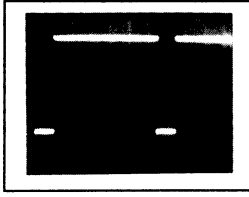
13. 10μsec/DIV 1V/DIV



7. 10msec/DIV 1V/DIV



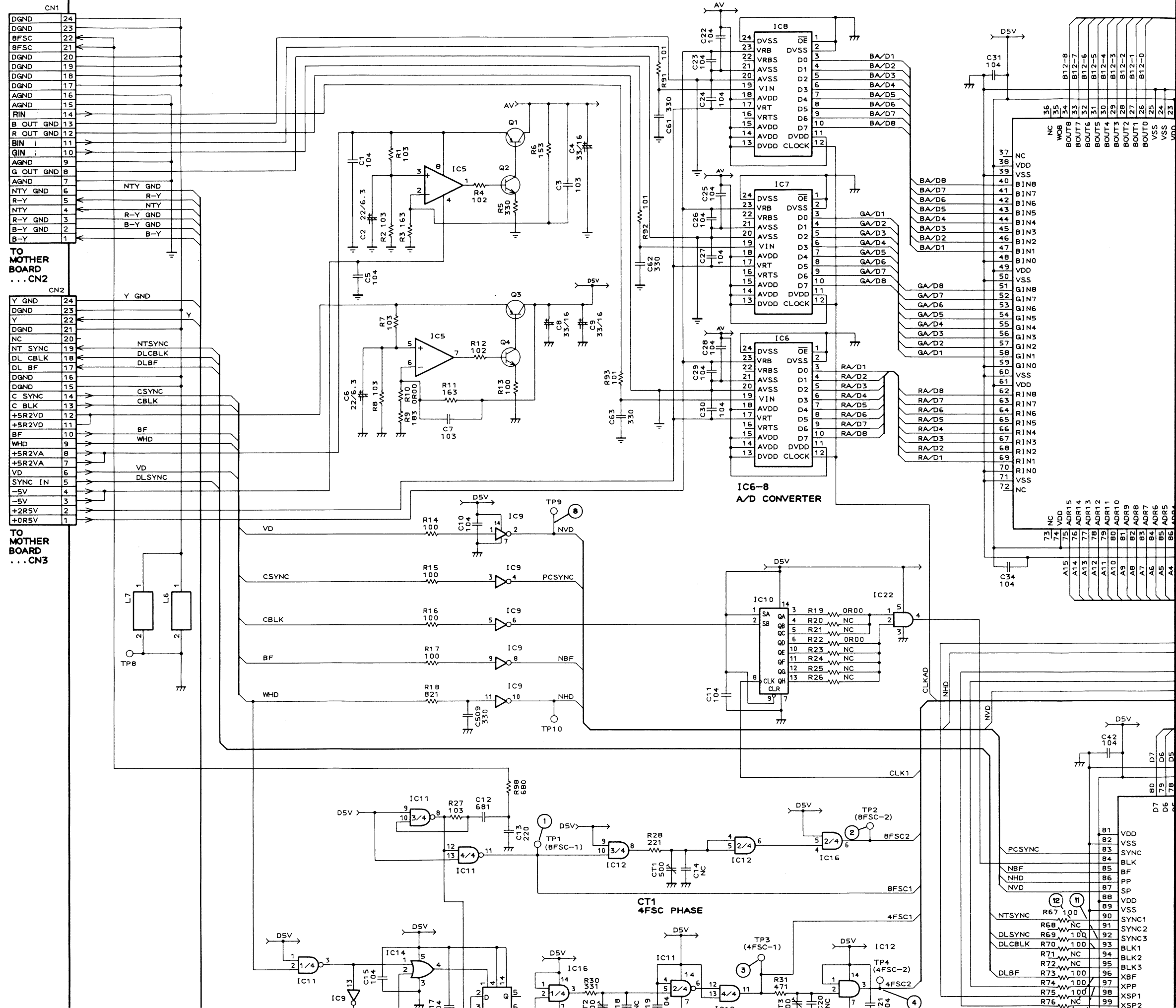
14. 10μsec/DIV 1V/DIV



E

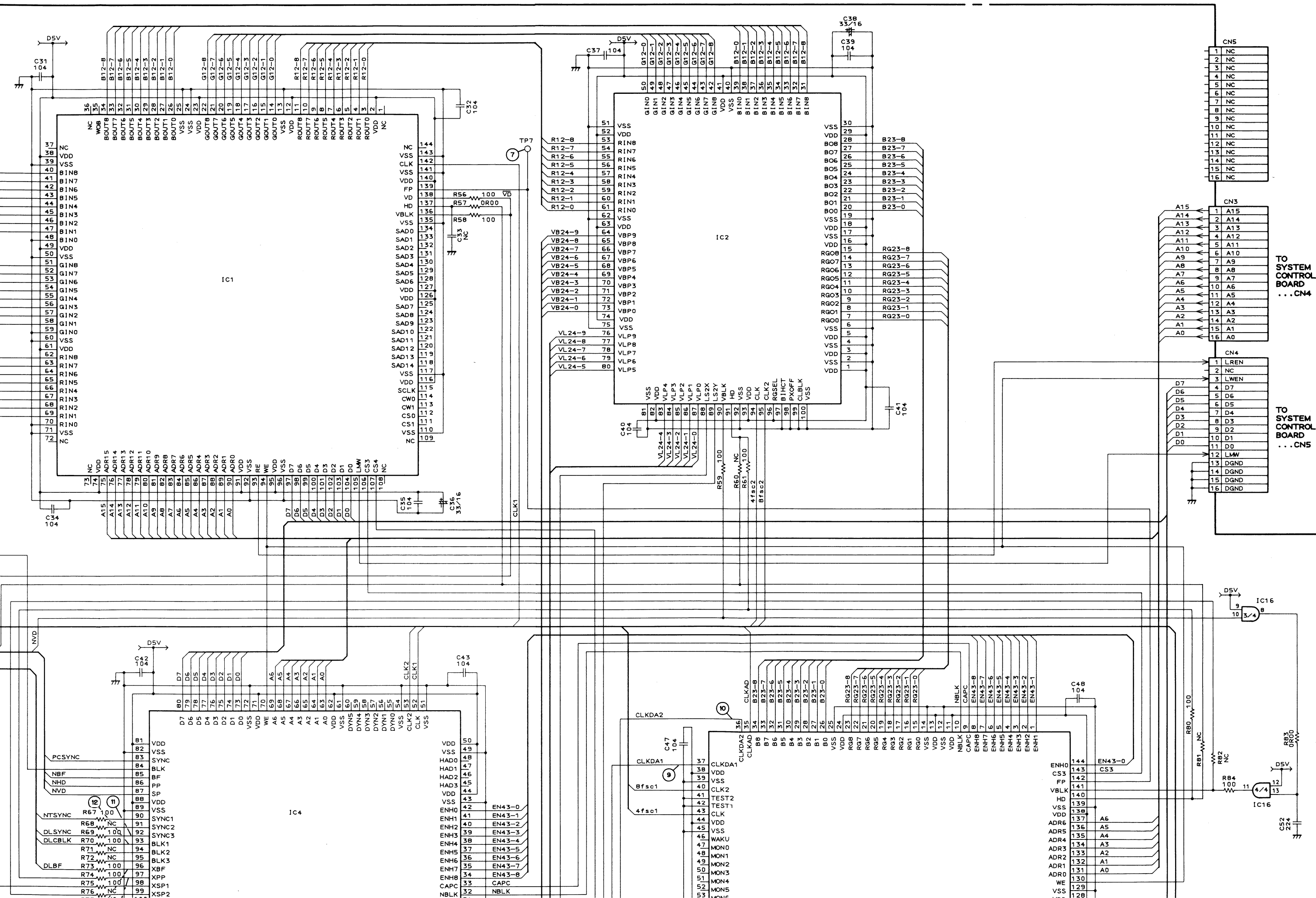
D

C

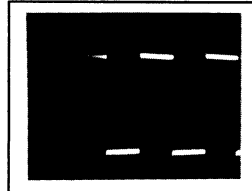




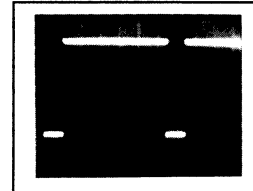
# OF DIGITAL PROCESS BOARD (WV-E550E)



7. 10msec/DIV 1V/DIV



14. 10µsec/DIV 1V/DIV



# < Index > DIGITAL PROCESS BOARD

IC1	D4
IC2	D5
IC3	B6
IC4	C4
IC5	D2, E2
IC6	D3
IC7	D3
IC8	E3
IC9	C2, D2
IC10	C3
IC11	B1, B2, C2
IC12	B3, C2, C3
IC14	B2
IC15	B2
IC16	B2, C3, C7
IC17	A2
IC18	A3
IC19	A3
IC20	A4
IC21	A4
IC22	C3
Q1	E2
Q2	E2
Q3	D2
Q4	D2

## DIGITAL PROCESS BOARD

	IC10	IC11	IC15	IC16
Pin 1	4.9	4.9	4.9	4.9
2	3.8	0.8	2.4	2.4
3	3.8	4.2	2.3	2.4
4	3.8	4.9	4.9	2.2
5	3.8	2.4	2.4	4.9
6	3.8	0.2	2.4	2.2
7	0	0	0	0
8	2.2	2.3	4.9	4.7
9	4.9	4.9	4.9	4.9
10	3.8	2.3	0	0.2
11	3.8	2.5	0.8	0.2
12	3.8	2.3	0.8	0.2
13	3.8	4.9	0	4.7
14	4.9	4.9	4.9	0.2

B

A

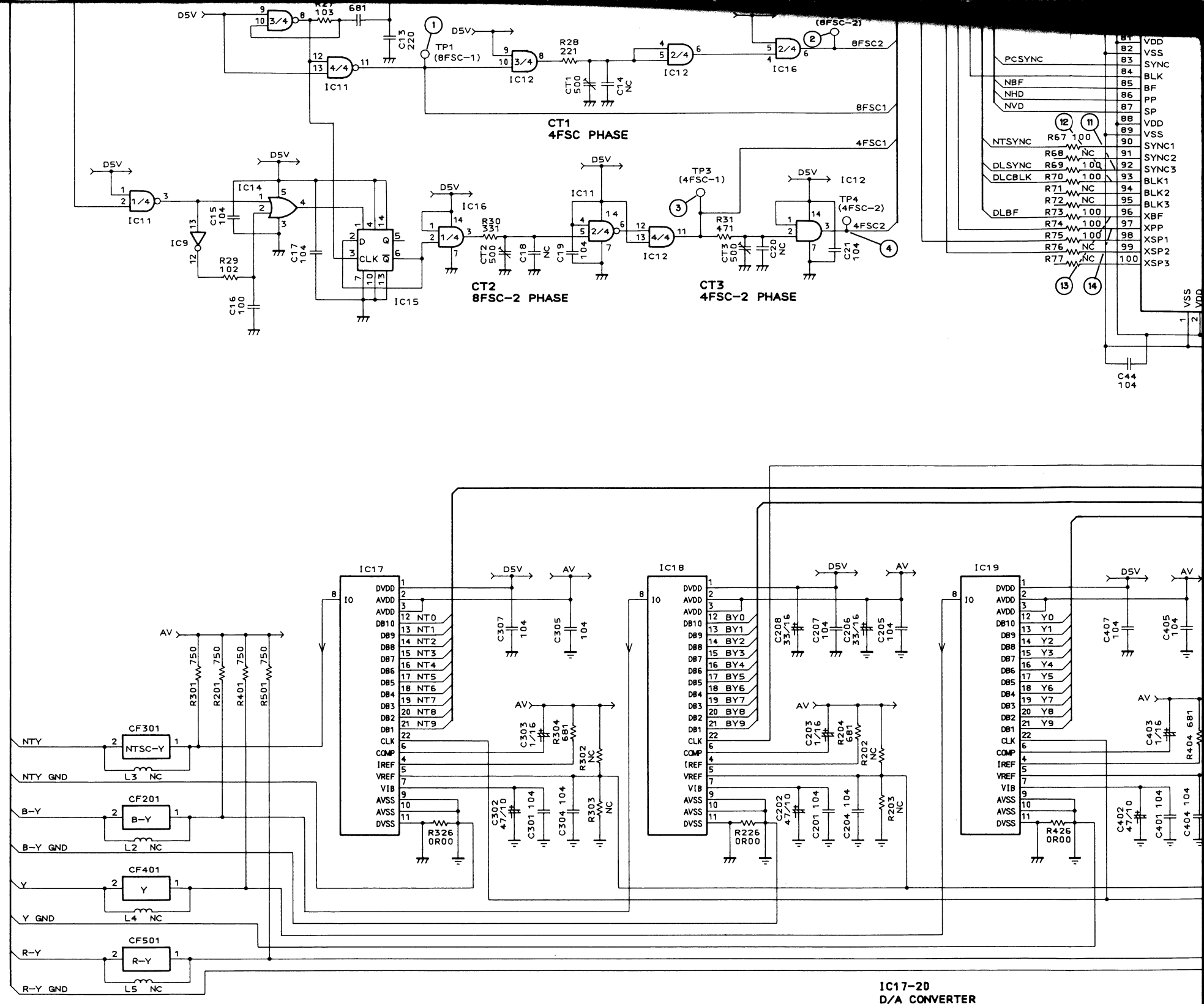




Diagram illustrating the structure of a 3-digit BCD code:

- Multiplier (0 - 5)
- 2nd. Significant Digit (0 - 9)
- 1st. Significant Digit (1 - 9)

820  $\rightarrow 82 \times 10^0 = 82 \text{ pF}$   
 102  $\rightarrow 10 \times 10^2 = 1000 \text{ pF} = 0.001 \text{ }\mu\text{F}$   
 104  $\rightarrow 10 \times 10^4 = 100000 \text{ pF} = 0.1 \text{ }\mu\text{F}$

The suffix attached to capacitance indicates a type of capacitor.

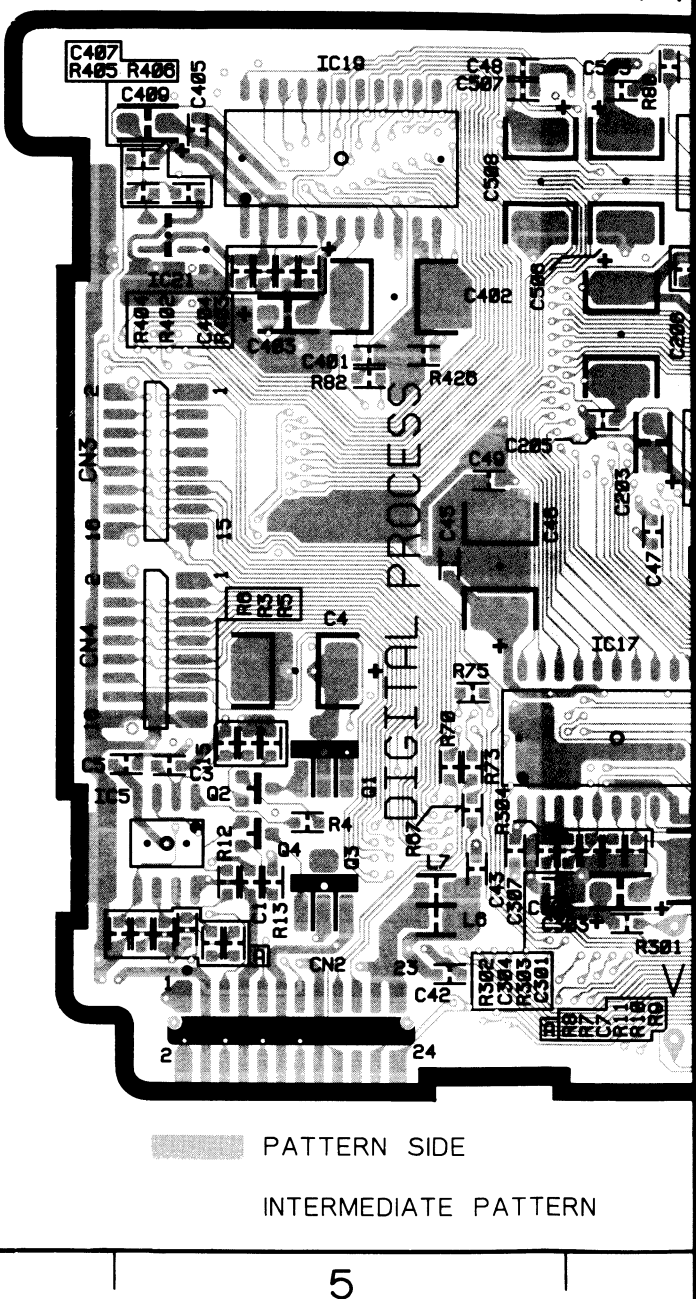
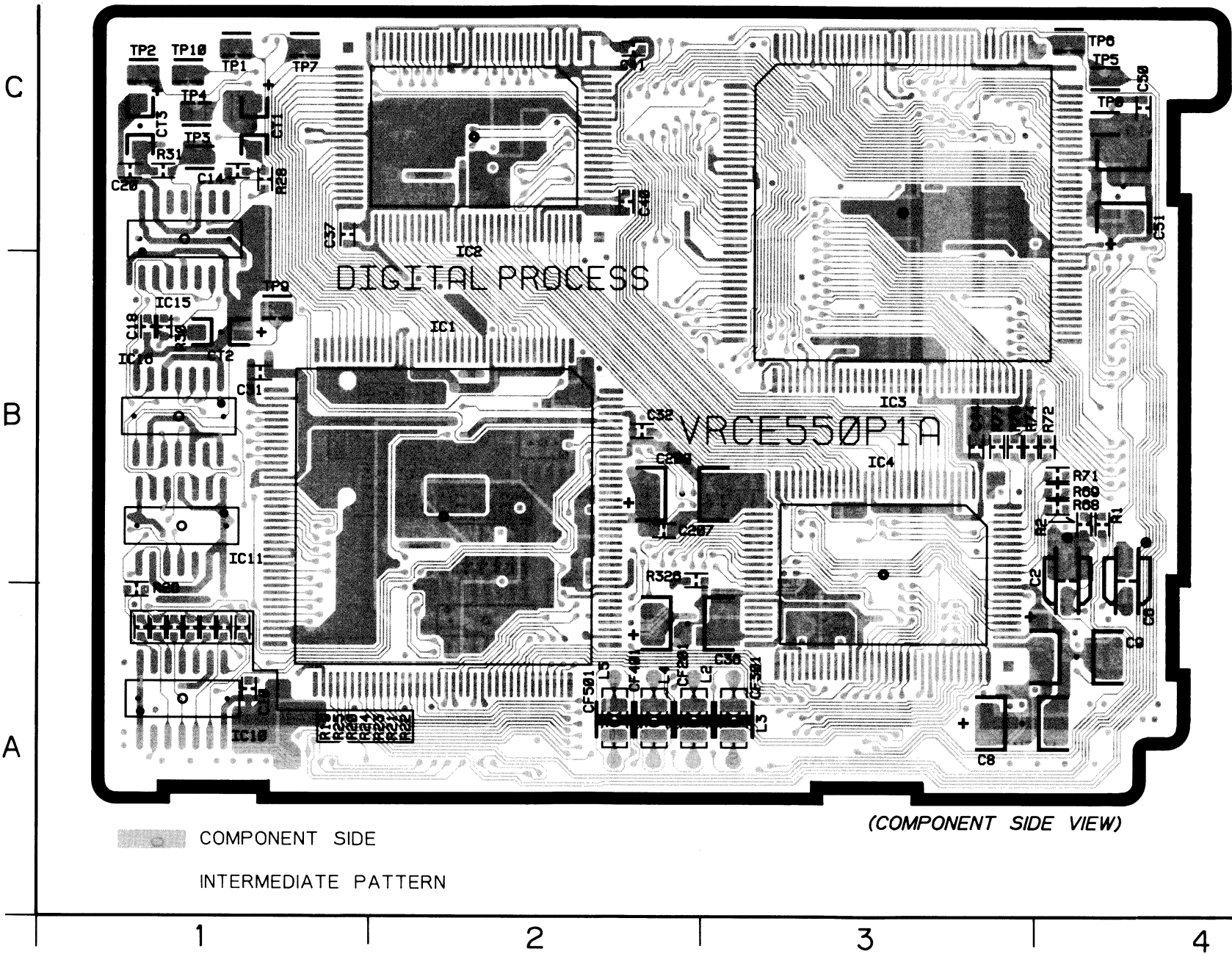
CONDUCTOR VIEW OF DIGITAL PROCESS BOARD (WV-E550E)

DIGITAL PROCESS BOARD

DIGITAL PROCESS BOARD

< Index >  
DIGITAL PROCESS  
BOARD

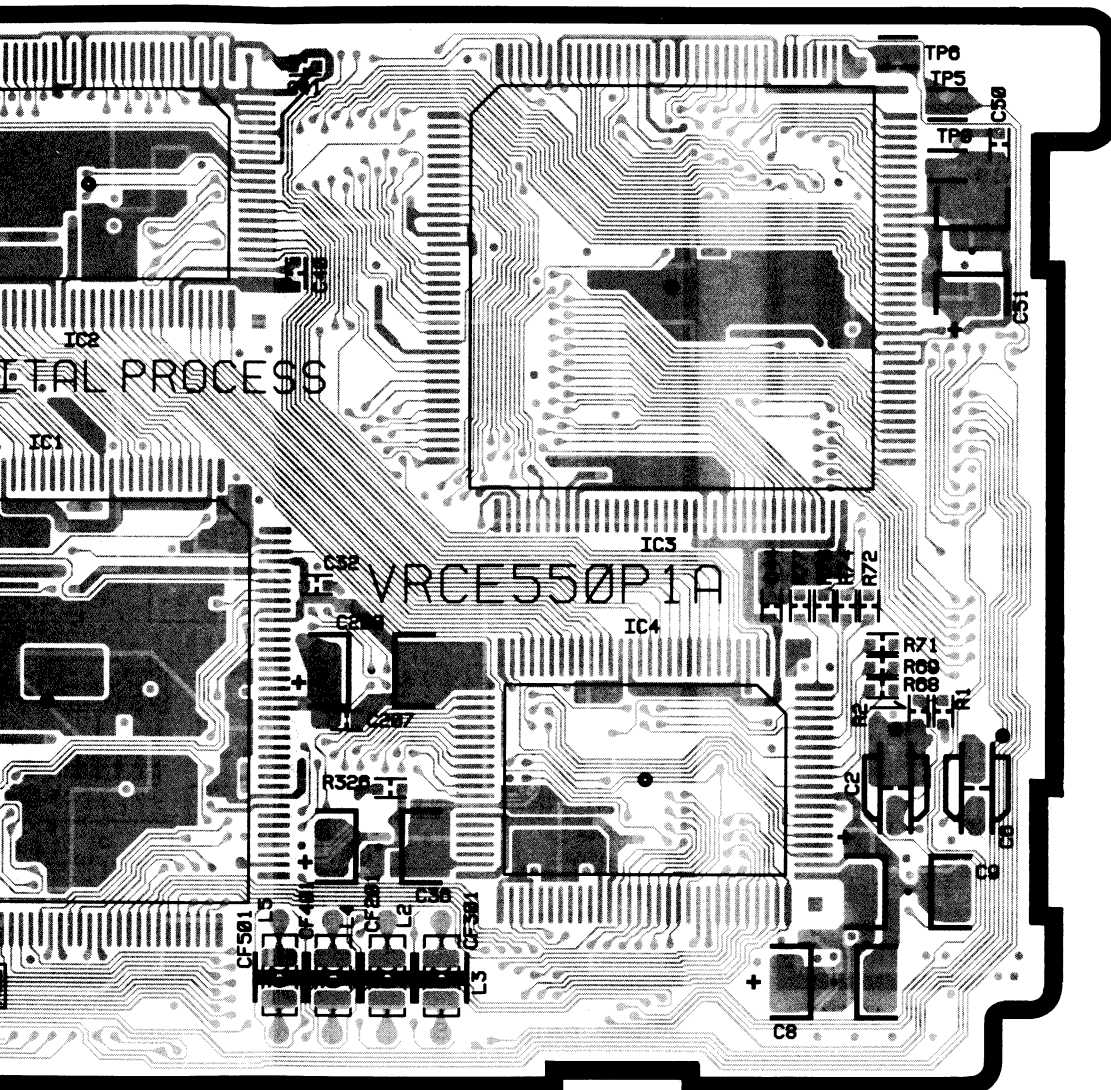
- |      |    |
|------|----|
| IC1  | B2 |
| IC2  | C2 |
| IC3  | C3 |
| IC4  | B3 |
| IC5  | A5 |
| IC6  | A7 |
| IC7  | B7 |
| IC8  | C7 |
| IC9  | A7 |
| IC10 | A1 |
| IC11 | B1 |
| IC12 | C8 |
| IC14 | B8 |
| IC15 | C1 |
| IC16 | B1 |
| IC17 | B6 |
| IC18 | B6 |
| IC19 | C5 |
| IC20 | C6 |
| IC21 | C5 |
| IC22 | B7 |
| Q1   | B5 |
| Q2   | B5 |
| Q3   | A5 |
| Q4   | A5 |





## CONDUCTOR VIEW OF DIGITAL PROCESS BOARD (WV-E550E)

## ESS BOARD



(COMPONENT SIDE VIEW)

ERN

2

3

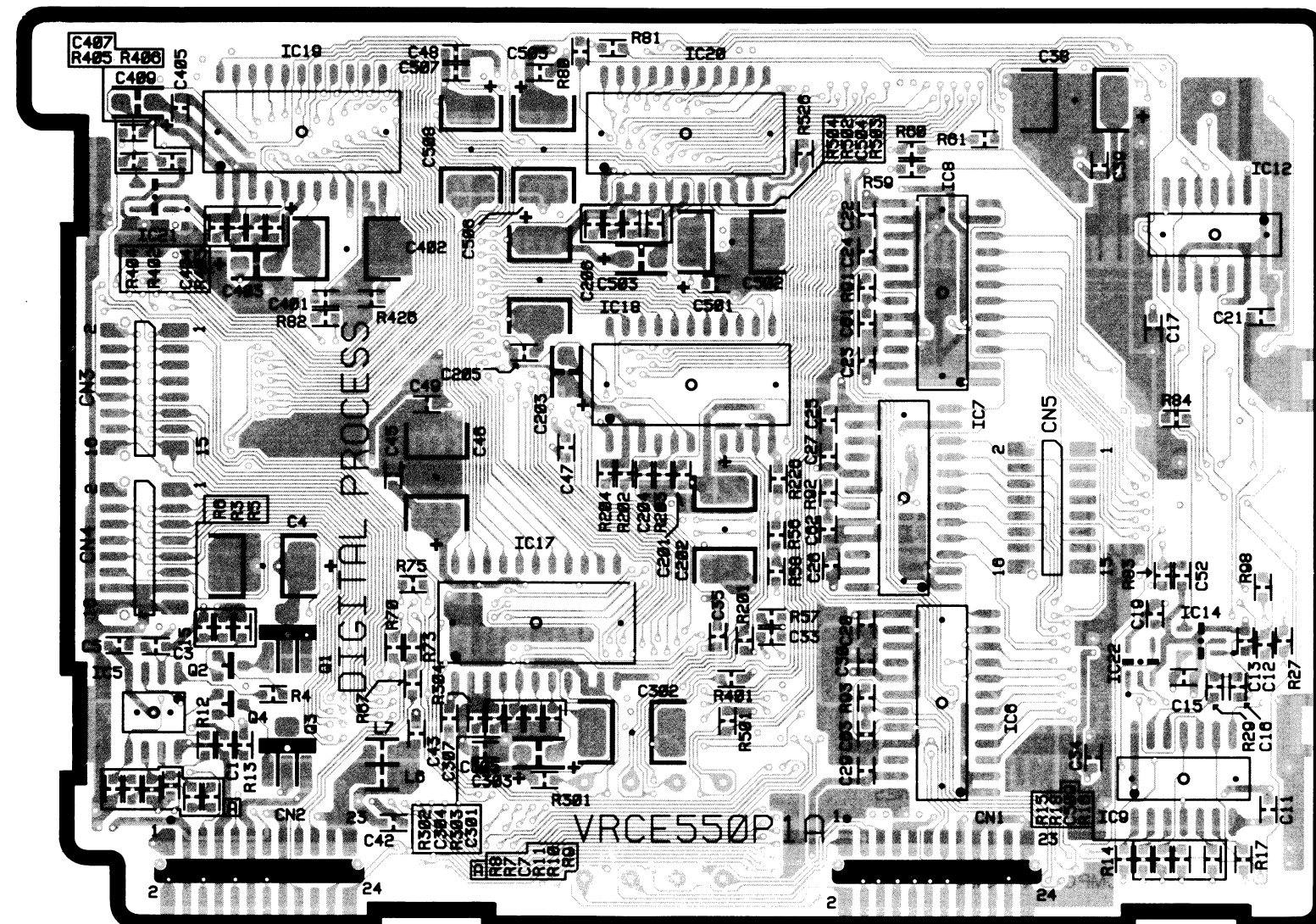
4

5

6

7

# DIGITAL PROCESS BOARD



(PATTERN SIDE VIEW)

 PATTERN SIDE

INTERMEDIATE PATTERN

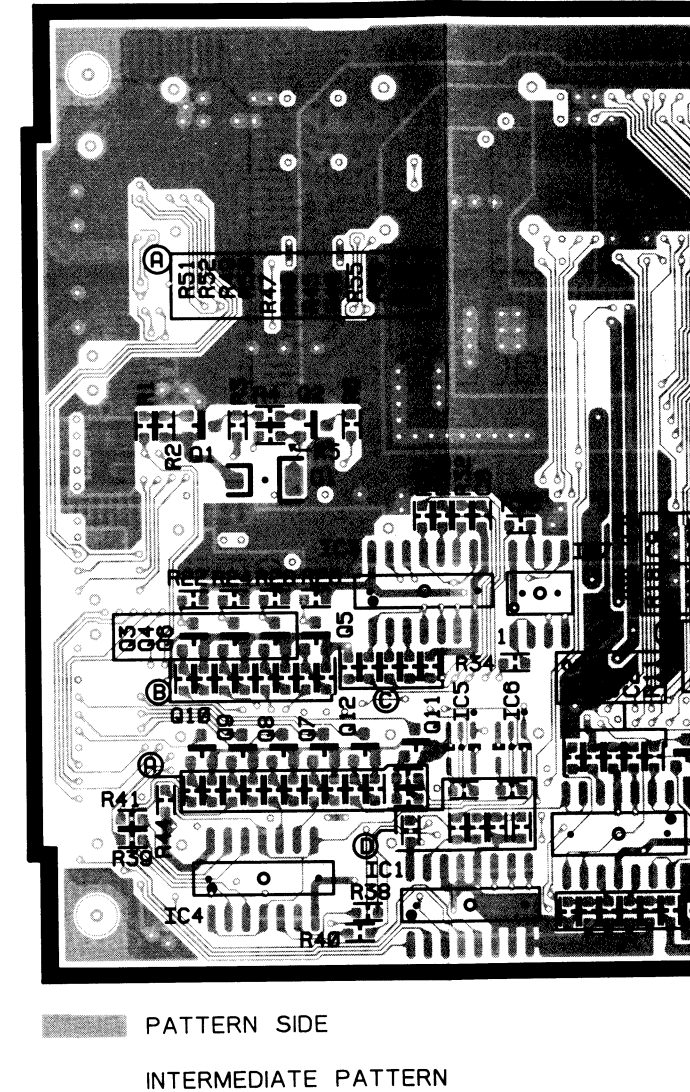
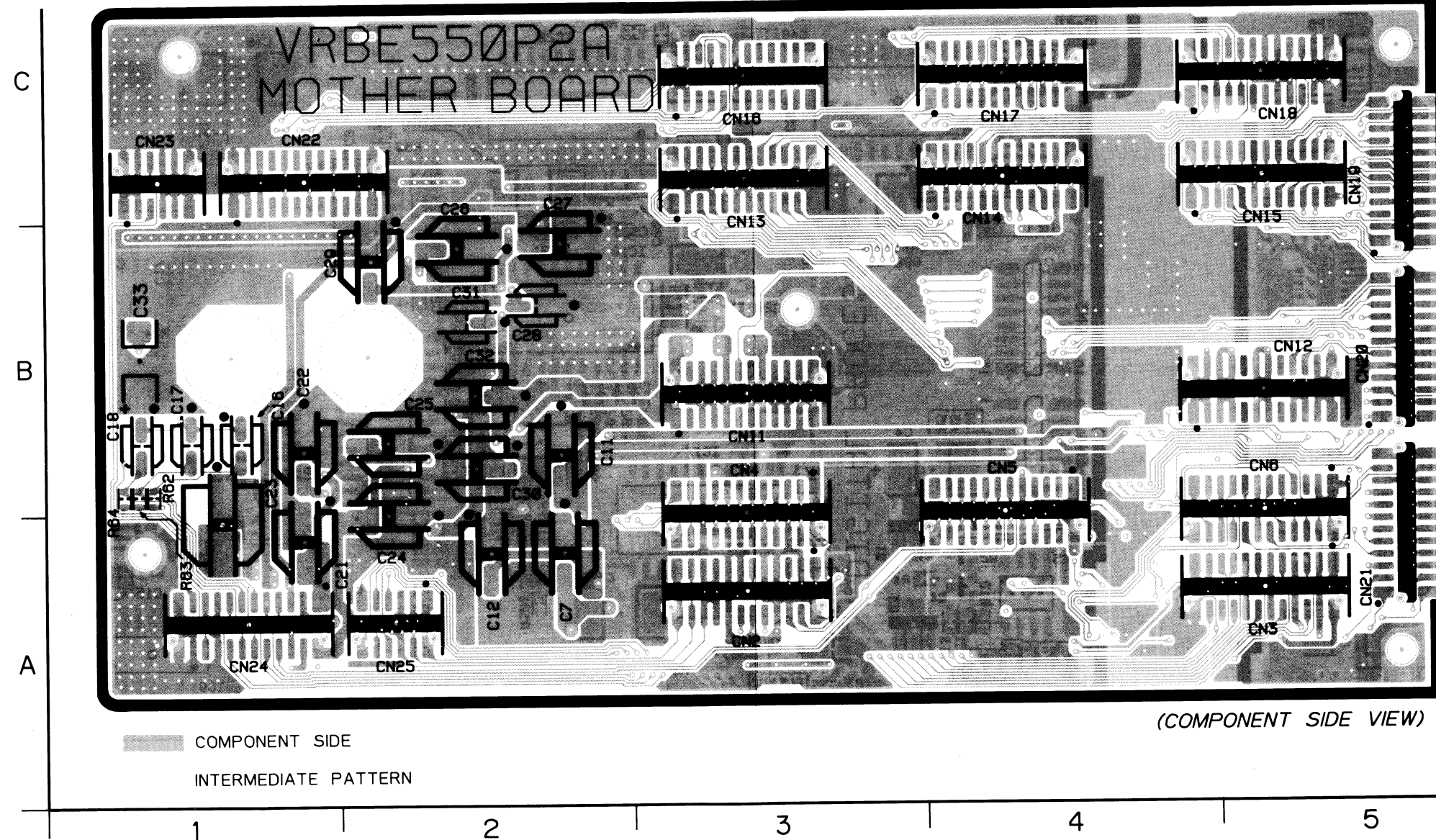
### CONDUCTOR VIEW OF MOTHER BOARD (WV-E550E)

# MOTHER BOARD

MOTHER BOARD

**< Index>**  
**MOTHER BOARD**

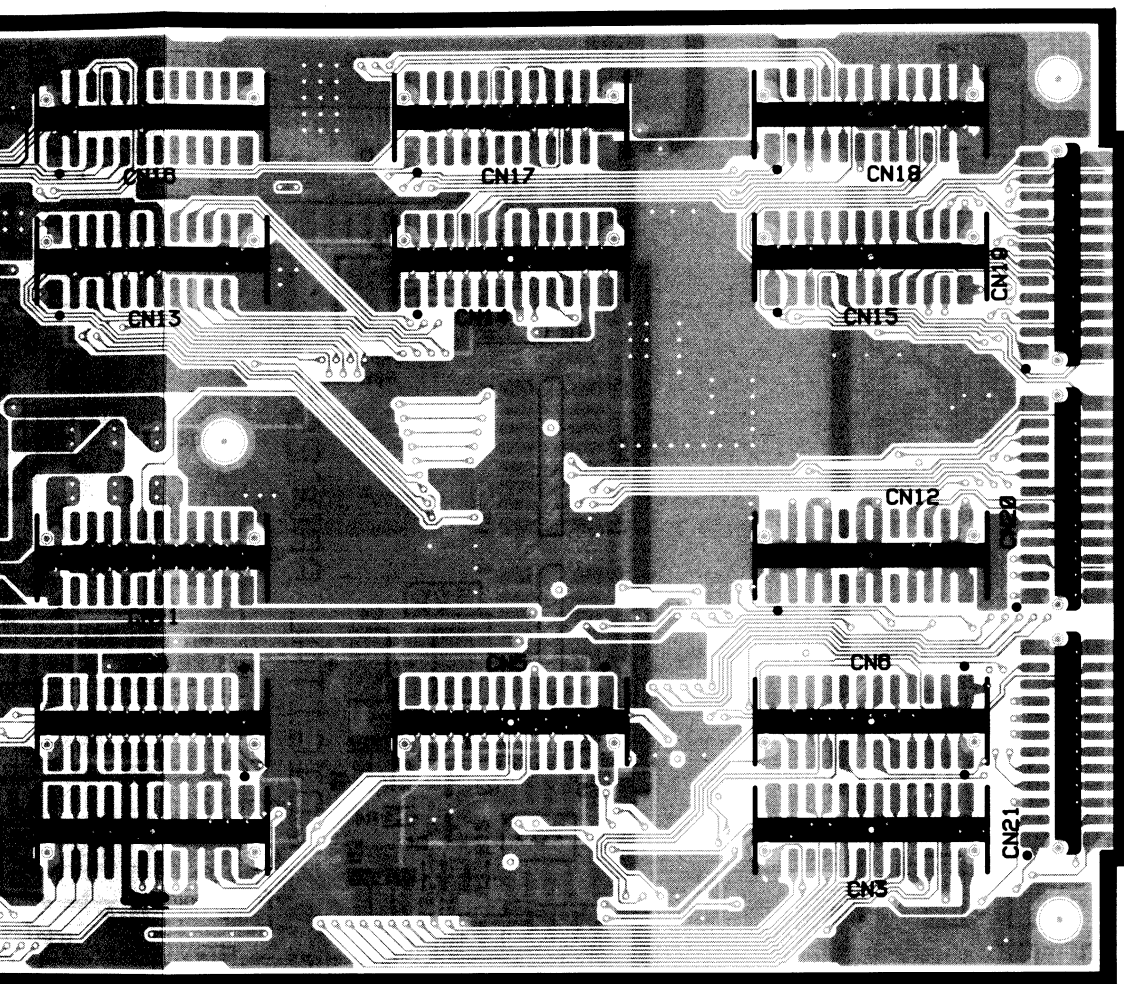
IC1	A6
IC2	A7
IC3	B6
IC4	A6
IC5	A7
IC6	A7
IC7	B7
IC8	B9
IC9	A9
IC10	A9
IC11	A9
Q1	B6
Q2	B6
Q3	B6
Q4	B6
Q5	B6
Q6	B6
Q7	A6
Q8	A6
Q9	A6
Q10	A6
Q11	A6
Q12	A6
Q16	A10
Q17	A10
Q18	B10
Q19	B10
Q20	B9
Q21	B9
Q22	B9
Q23	B8
Q24	B9
Q25	B9
Q26	B8
Q27	B8
Q28	B9
Q29	B9
D1	E6
D2	A7
D6	B10



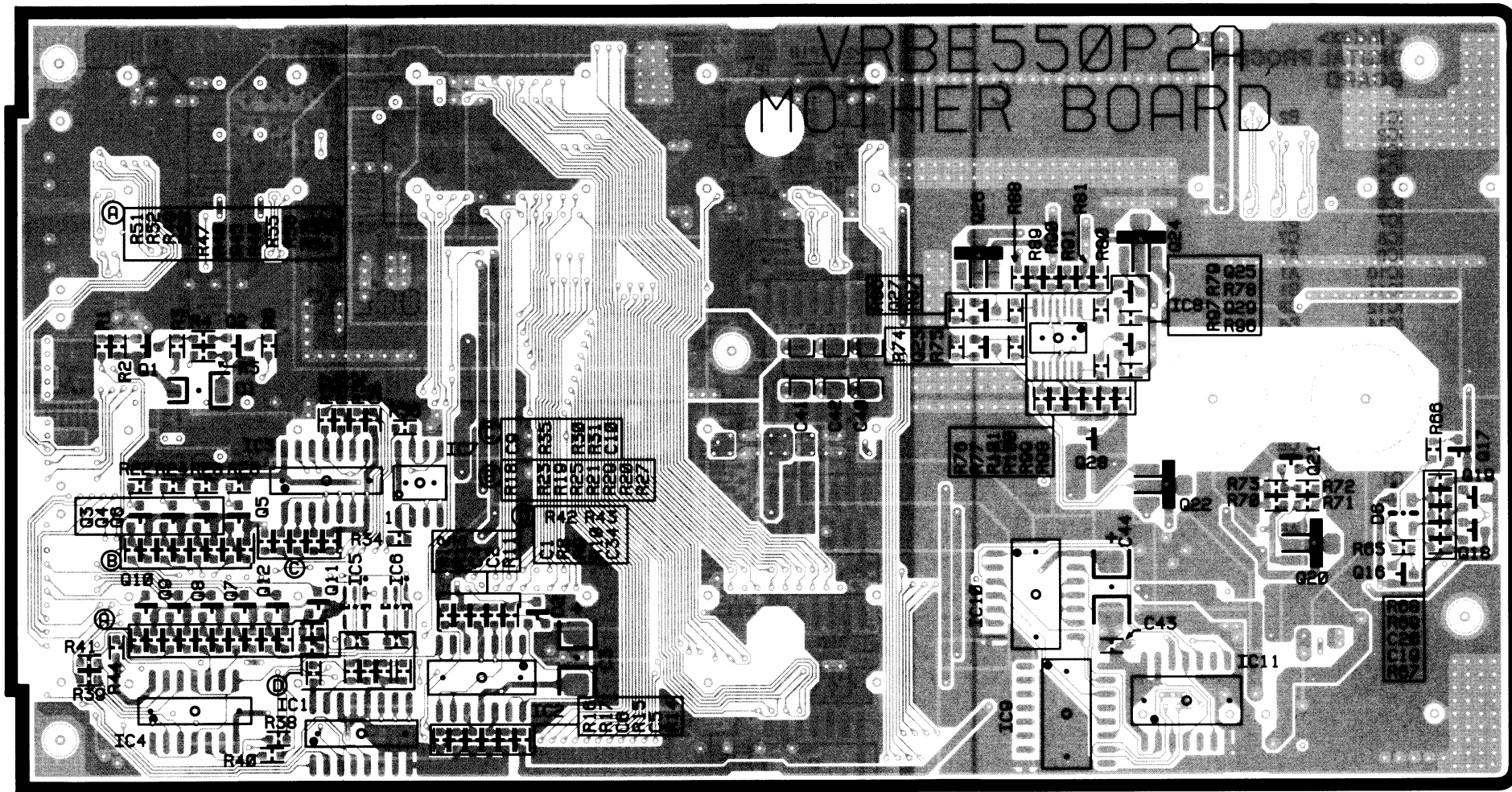


## CONDUCTOR VIEW OF MOTHER BOARD (WV-E550E)

# MOTHER BOARD



(COMPONENT SIDE VIEW)



(PATTERN SIDE VIEW)

 PATTERN SIDE

### INTERMEDIATE PATTERN

# SCHEMATIC DIAGRAM OF MOTHER BOARD

MOTHER BOARD

< Index >

MOTHER BOARD

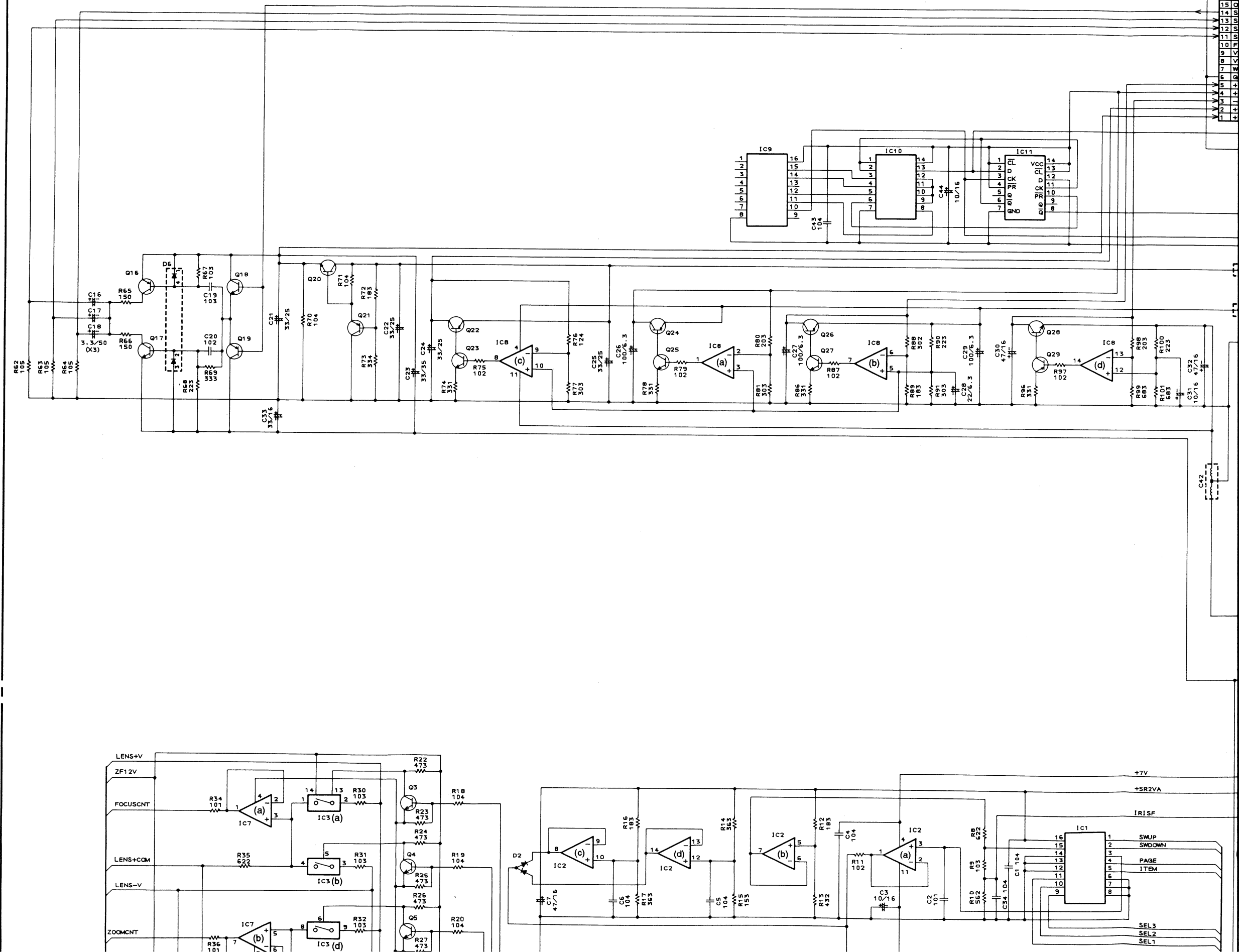
IC1	B4
IC2	B2, B3, B4
IC3	B2
IC4	A2, B2
IC5	A2
IC6	A2
IC7	B1
IC8	D2, D3, D4
IC9	E3
IC10	E3
IC11	E4
Q1	A8
Q2	A8
Q3	B2
Q4	B2
Q5	B2
Q6	B2
Q7	B2
Q8	A2
Q9	A2
Q10	A2
Q11	A2
Q12	A2
Q16	D1
Q17	D1
Q18	D1
Q19	D1
Q20	D2
Q21	D2
Q22	D2
Q23	D2
Q24	D3
Q25	D3
Q26	D3
Q27	D3
Q28	D4
Q29	D4
D1	B8
D2	B2
D6	D1

E

D

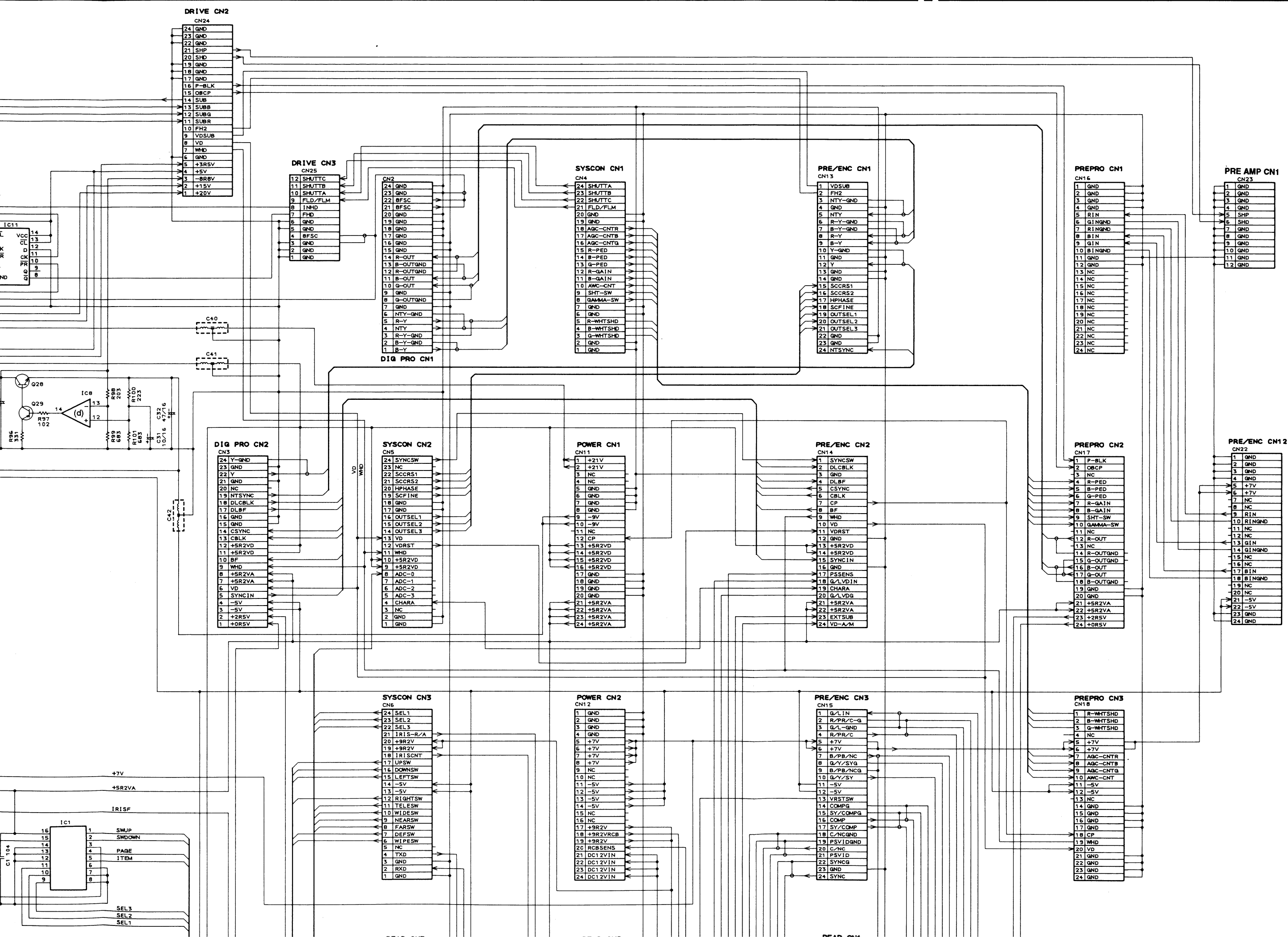
C

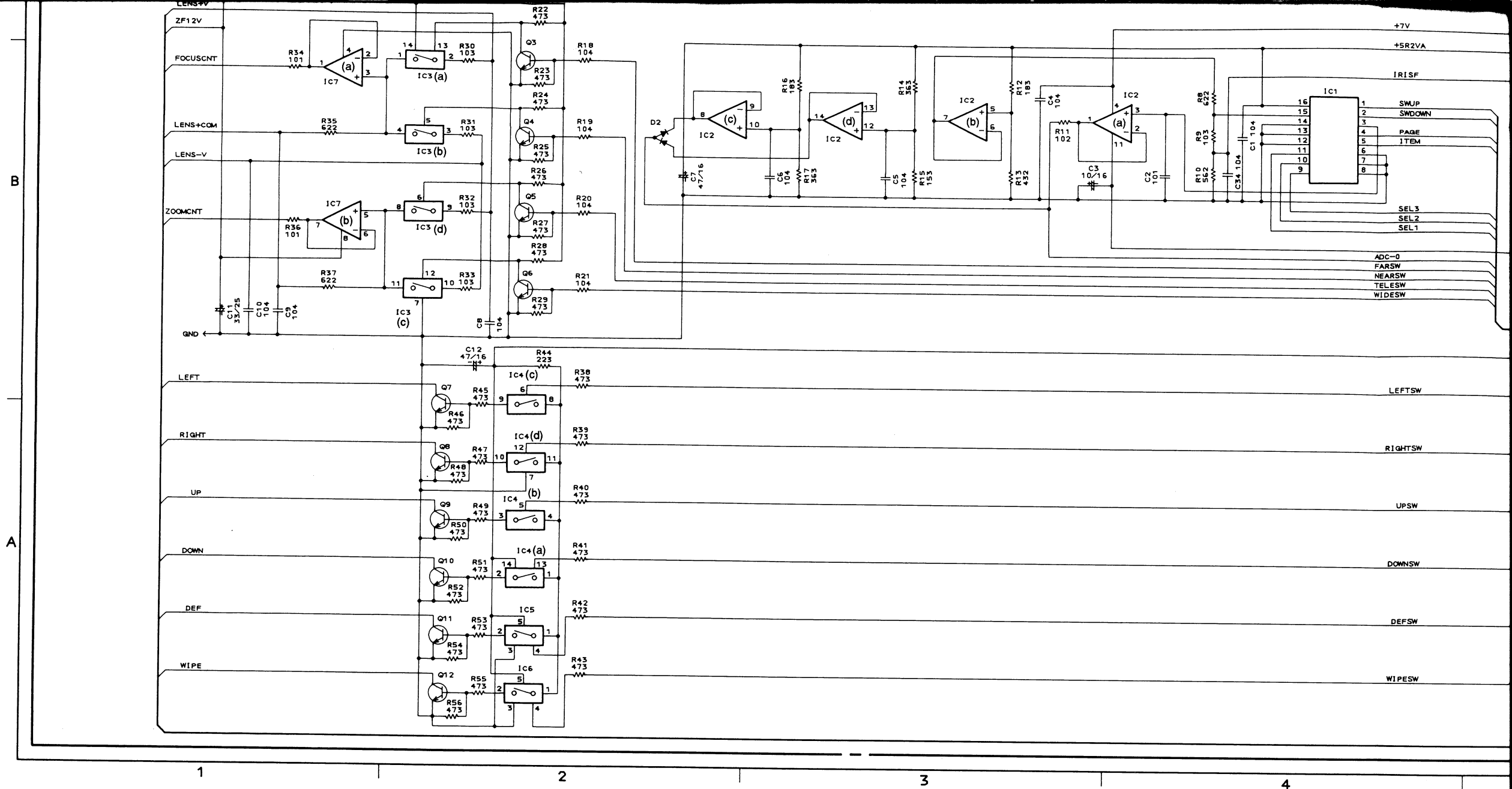
B





## NAME OF MOTHER BOARD (WV-E550E)

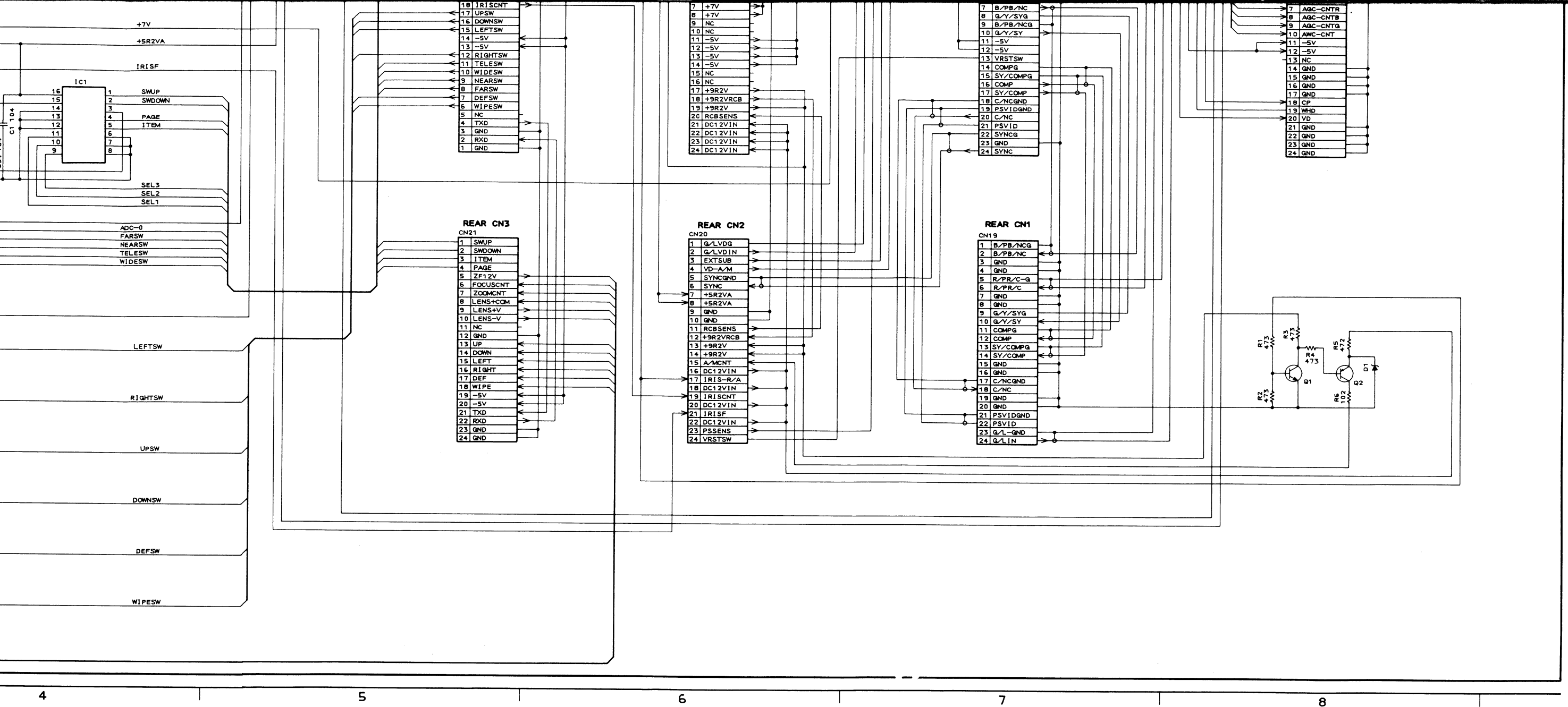




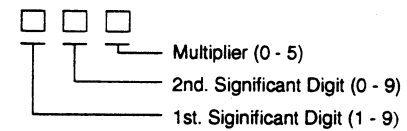
MOTHER BOARD

	IC1	IC2	IC3	IC4	IC5	IC6	IC7	IC8	IC9	IC10	IC11
Pin 1	5.2	0.1	0.3	5.2	5.2	5.2	0.2	1.6	0	4.5	4.9
2	5.2	0	1.9	0	0	0	2.2	3.0	2.5	0.2	0.4
3	0.1	0	0.4	-	0	0	0.3	3.0	2.5	2.2	2.4
4	5.2	0	0.4	5.2	0	0	0	5.2	2.5	2.2	5.0
5	5.2	0	0	0	5.2	5.2	0.3	3.0	2.5	2.2	0.5
6	0	0	0	0			0.2	0.2	2.5	4.9	1.8
7	0	0	2.1	0			0.2	0.6	2.7	0	0
8	0	3.5	0.3	5.2			0	0.6	0	0	4.4
9	0.1	3.5	0.4	0				3.0	0.3	5.0	0.6
10	0.1	3.5	2.1	0				3.0	0.2	0.2	4.9
11	0.1	-5.2	0.4	5.2				-9.0	0	5.0	4.5
12	0.1	1.5	0	0				-6.8	2.2	5.0	0
13	0	0	0	0				-6.8	2.5	0.4	5.0
14	0	1.5	0	5.2				-	0.2	5.0	5.0
15	0.1									2.2	
16	5.2									5.0	

	B	C	E
Q1	0	9.2	0
2	9.2	2.2	8.3
3	0.6	0	0
4	0.6	0	0
5	0.6	0	0
6	0.6	0	0
7	0	0.5	0
8	0	0.5	0
9	0	0.5	0
10	0.1	-	0
11	0	4.0	0
12	0	0.5	0
16	18.9	-4.9	18.8
17	-4.6	-4.9	-5.2
18	4.9	18.8	4.4
19	4.9	-5.2	4.4
20	19.0	21.0	18.8
21	20.0	0	19.3
22	20.5	14.9	21.1
23	0.6	20.5	0
24	1.2	5.0	5.2
25	1.5	4.4	0.9
26	4.5	3.5	5.2
27	0.6	4.5	0
28	-8.4	-8.8	-8.9
29	-	-8.4	0



**Note:** The value indicated in the schematic diagram should be read as follows:



**< Example >**

For Resistor:

$$\begin{aligned} 330 &\rightarrow 33 \times 10^0 = 33 \Omega \\ 561 &\rightarrow 56 \times 10^1 = 560 \Omega \\ 123 &\rightarrow 12 \times 10^3 = 12k \Omega \\ 0R00 &= 0 \Omega \end{aligned}$$

For Capacitor:

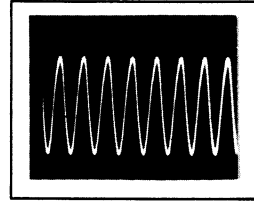
$$\begin{aligned} 820 &\rightarrow 82 \times 10^0 = 82 \text{ pF} \\ 102 &\rightarrow 10 \times 10^2 = 1000 \text{ pF} = 0.001 \mu\text{F} \\ 104 &\rightarrow 10 \times 10^4 = 100000 \text{ pF} = 0.1 \mu\text{F} \end{aligned}$$

The suffix attached to capacitance indicates a type of capacitor.

# SCHEMATIC DIAGRAM OF SYSTEM CO

## SYSTEM CONTROL BOARD

1. 0.1μsec/DIV 1V/DIV



## < Index > SYSTEM CONTROL BOARD

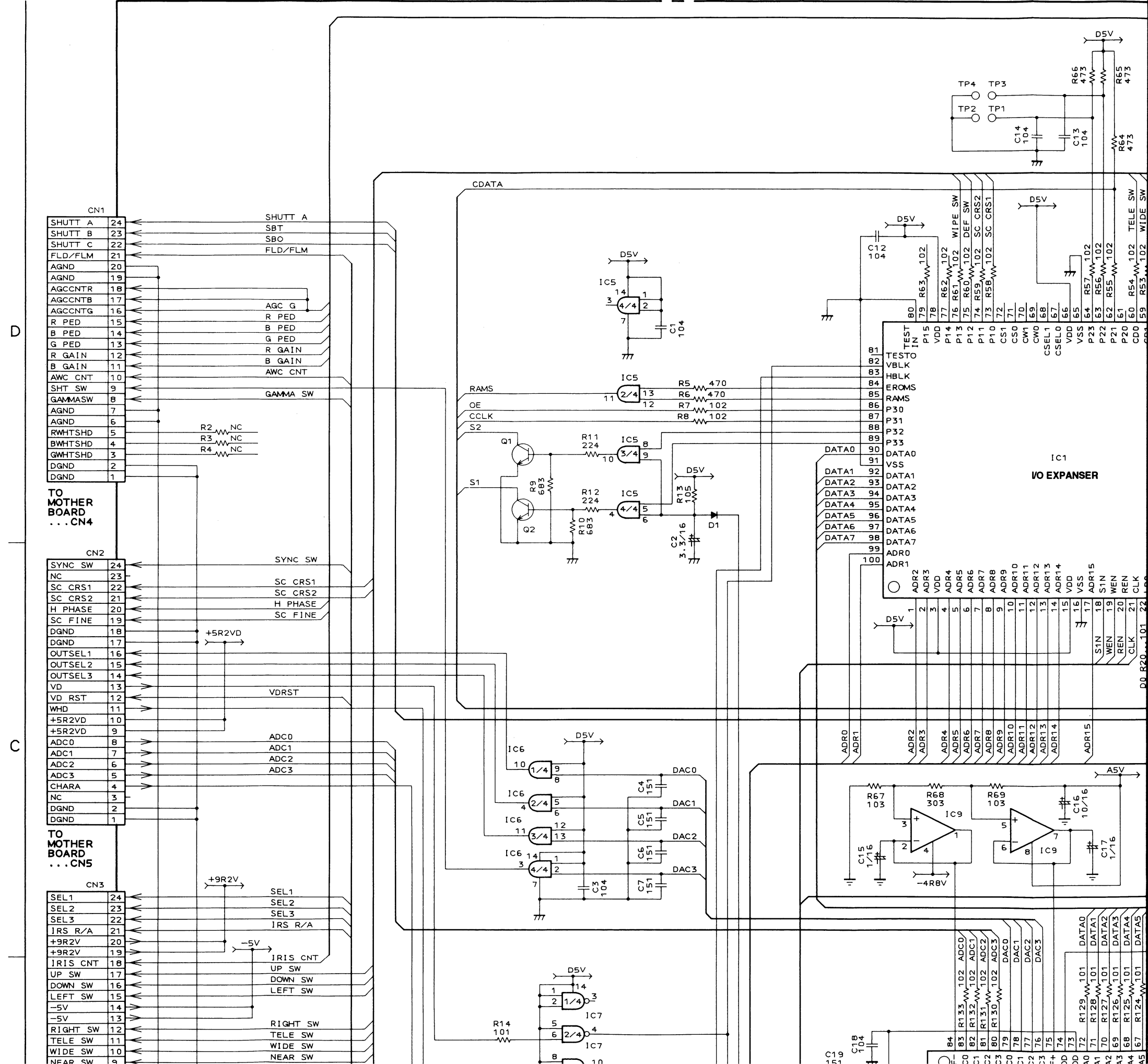
IC1 D3  
IC2 B3  
IC3 C4  
IC4 C5  
IC5 D2  
IC6 C2  
IC7 B2  
IC8 A2, B2  
IC9 C3  
IC10 A3  
IC11 A3  
IC12 A3  
IC13 A3  
IC14 B5, C5  
IC15 C6  
IC16 B4, B5  
IC17 B4  
IC18 B4  
IC19 A6, B6  
Q1 D2  
Q2 D2  
Q9 A3  
Q10 A3  
Q11 A3  
Q12 B5  
Q13 B5  
Q14 B5  
Q15 C5  
Q16 C5  
Q17 B6  
Q18 B6  
Q19 A6  
Q20 A6  
Q21 A6  
D1 D2  
D3 A3  
D4 A3  
D5 A3  
D6 B5  
D7 B5  
D8 B5  
D9 C5  
D10 B5

## SYSTEM CONTROL BOARD

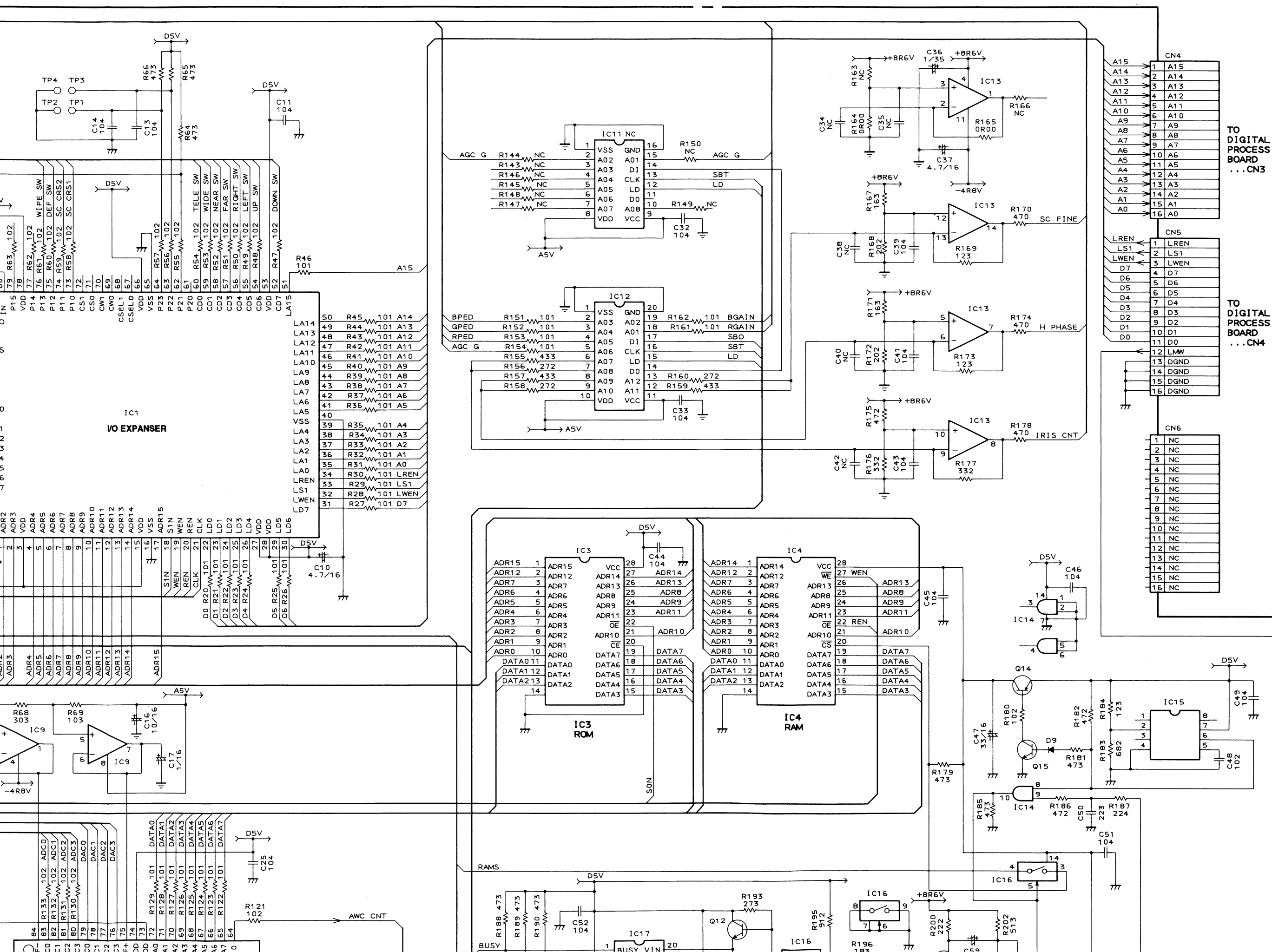
	IC5	IC6	IC7	IC8	IC9	IC10	IC14	IC16	IC18	IC19	IC17
Pin 1	5.0	5.0	5.0	5.0	1.0	0.3	0	1.2	2.1	0.7	0
2	5.0	3.7	5.0	5.0	1.0	1.4	0	1.2	0	1.3	5.0
3	5.0	4.9	0	5.0	1.0	0.4	0	4.9	5.0	1.3	0
4	0	5.0	4.8	5.0	-5.0	0	0	2.9	5.0	5.2	5.0
5	0	5.0	5.0	5.0	4.0	1.2	0	4.9	5.0	-1.3	5.0
6	4.7	3.7	0.2	5.0	3.7	4.7	0	0	2.1	-1.3	0.5
7	0	0	0	0	3.7	5.0	0	0	2.1	-0.5	2.5
8	0	1.1	5.0	5.0	5.0	0.5	4.7	0	0	0	2.4
9	4.7	5.0	5.0	5.2			4.6	0	0	0	2.4
10	0	0	0	5.0			5.0	5.0	0	0	0
11	3.9	5.0	4.2	5.0			5.0	5.0	2.1	-5.2	4.8
12	3.7	5.0	5.0	5.0			4.7	5.0	0	2.2	5.0
13	5.0	3.7	0.8	-			4.7	5.0	-	2.2	4.8
14	5.0	5.0	5.0	5.0			5.0	5.0	0	0.5	0.6
15											0
16											5.0
17											0
18											0
19											1.2
20											1.2

	B	C	E
Q2	0	2.1	0
9	4.2	4.9	5.0
10	0.7	0.1	0
12	1.7	5.0	1.2
13	0.3	0	0.9

## SYSTEM CONTROL BOARD

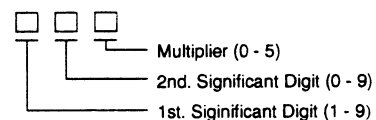


## MAIN PART OF SYSTEM CONTROL BOARD (WV-E550E)



7	0	0	0	0	3.7	5.0	0	0	2.1	-0.5	2.5
8	0	1.1	5.0	5.0	5.0	0.5	4.7	0	0	0	2.4
9	4.7	5.0	5.0	5.2			4.6	0	0	0	2.4
10	0	0	0	5.0			5.0	5.0	0	0	0
11	3.9	5.0	4.2	5.0			5.0	5.0	2.1	-5.2	4.8
12	3.7	5.0	5.0	5.0			4.7	5.0	0	2.2	5.0
13	5.0	3.7	0.8	-			4.7	5.0	-	2.2	4.8
14	5.0	5.0	5.0	5.0			5.0	5.0	0	0.5	0.6
15											0
16											5.0
17											0
18											0
19											1.2
20											1.2

Note: The value indicated in the schematic diagram should be read as follows:



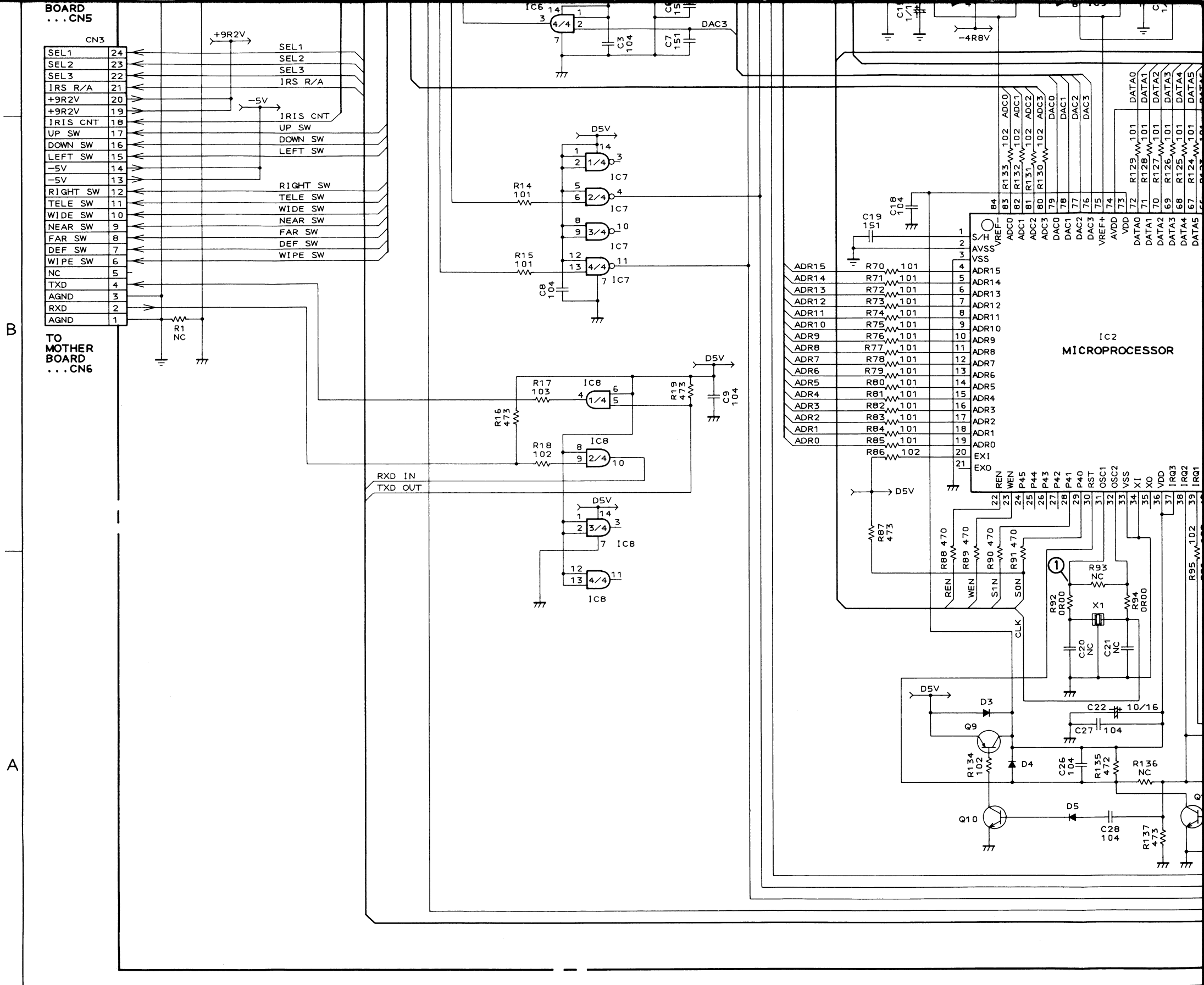
#### <Example>

For Resistor:

$330 \rightarrow 33 \times 10^0 = 33 \Omega$   
 $561 \rightarrow 56 \times 10^1 = 560 \Omega$   
 $123 \rightarrow 12 \times 10^3 = 12k \Omega$   
 $0R00 = 0 \Omega$

For Capacitor:

$820 \rightarrow 82 \times 10^0 = 82 pF$   
 $102 \rightarrow 10 \times 10^2 = 1000 pF = 0.001 \mu F$   
 $104 \rightarrow 10 \times 10^4 = 100000 pF = 0.1 \mu F$   
 The suffix attached to capacitance indicates a type of capacitor.





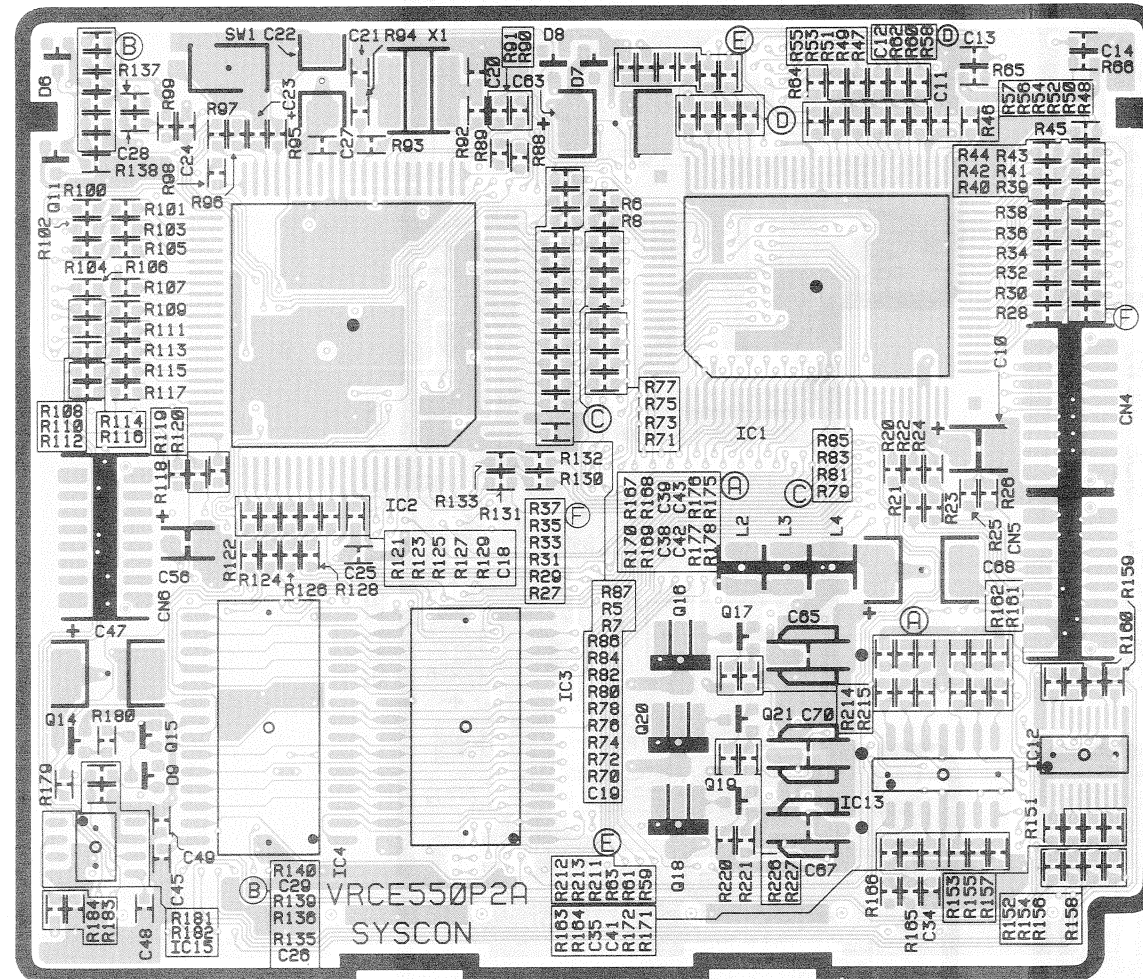


# CONDUCTOR VIEW OF SYSTEM CONTROL BOARD (WV-E550E)

< Index >  
SYSTEM CONTROL  
BOARD

IC1	B2
IC2	B2
IC3	B2
IC4	A1
IC5	B5
IC6	B6
IC7	B5
IC8	B5
IC9	C5
IC10	C6
IC12	A3
IC13	A3
IC14	B6
IC15	A1
IC16	B6
IC17	B6
IC18	C5
IC19	A4
Q1	B5
Q2	B5
Q9	C6
Q10	C6
Q11	C1
Q12	B6
Q13	B6
Q14	A1
Q15	A1
Q16	B2
Q17	B2
Q18	A2
Q19	A2
Q20	A2
Q21	A2
D1	B6
D3	C6
D4	C6
D5	C6
D6	C1
D7	C2
D8	C2
D9	A1
D10	B6

SYSTEM CONTROL BOARD

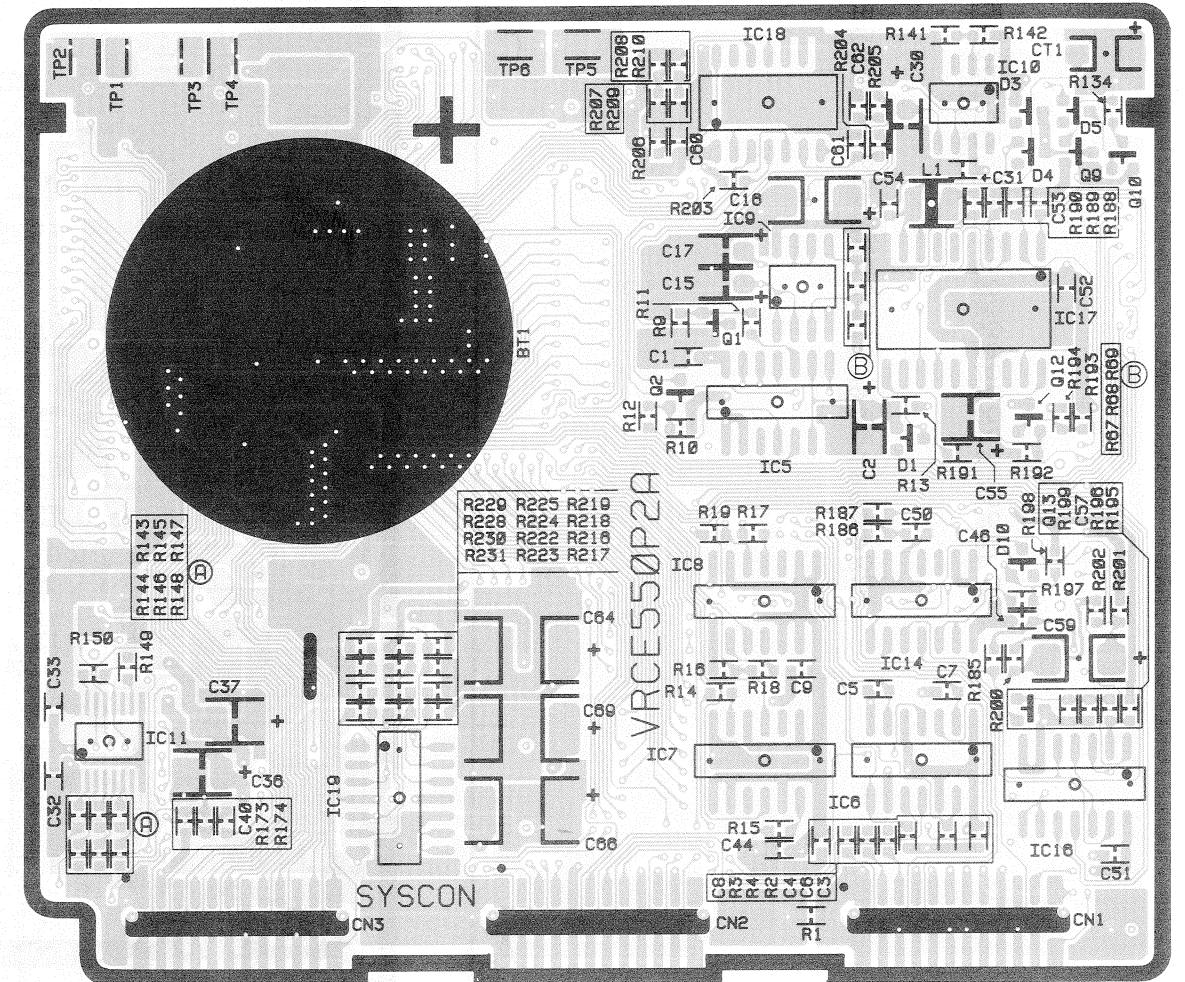


COMPONENT SIDE

(COMPONENT SIDE VIEW)

INTERMEDIATE PATTERN

SYSTEM CONTROL BOARD



PATTERN SIDE

(PATTERN SIDE VIEW)

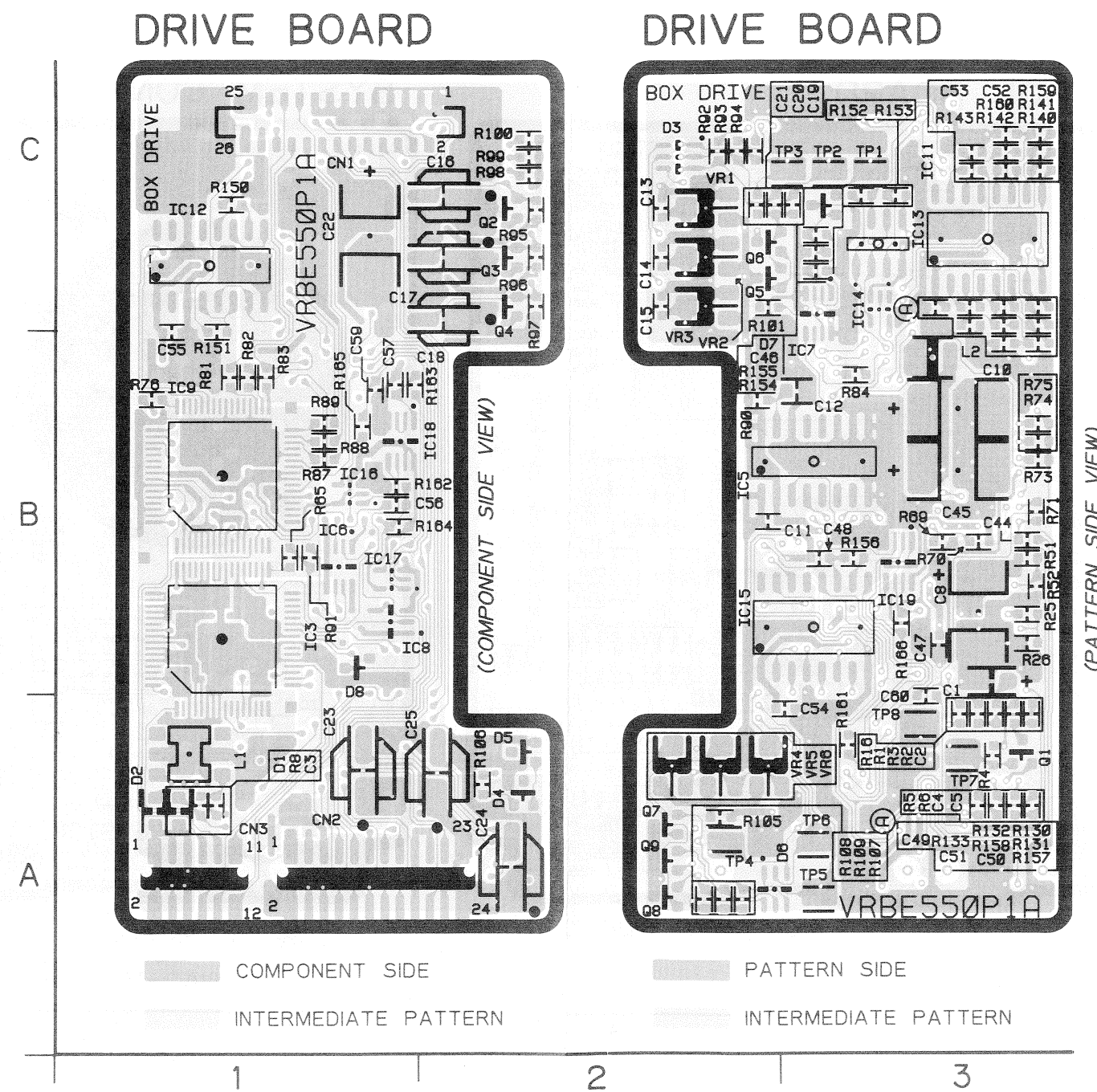
INTERMEDIATE PATTERN



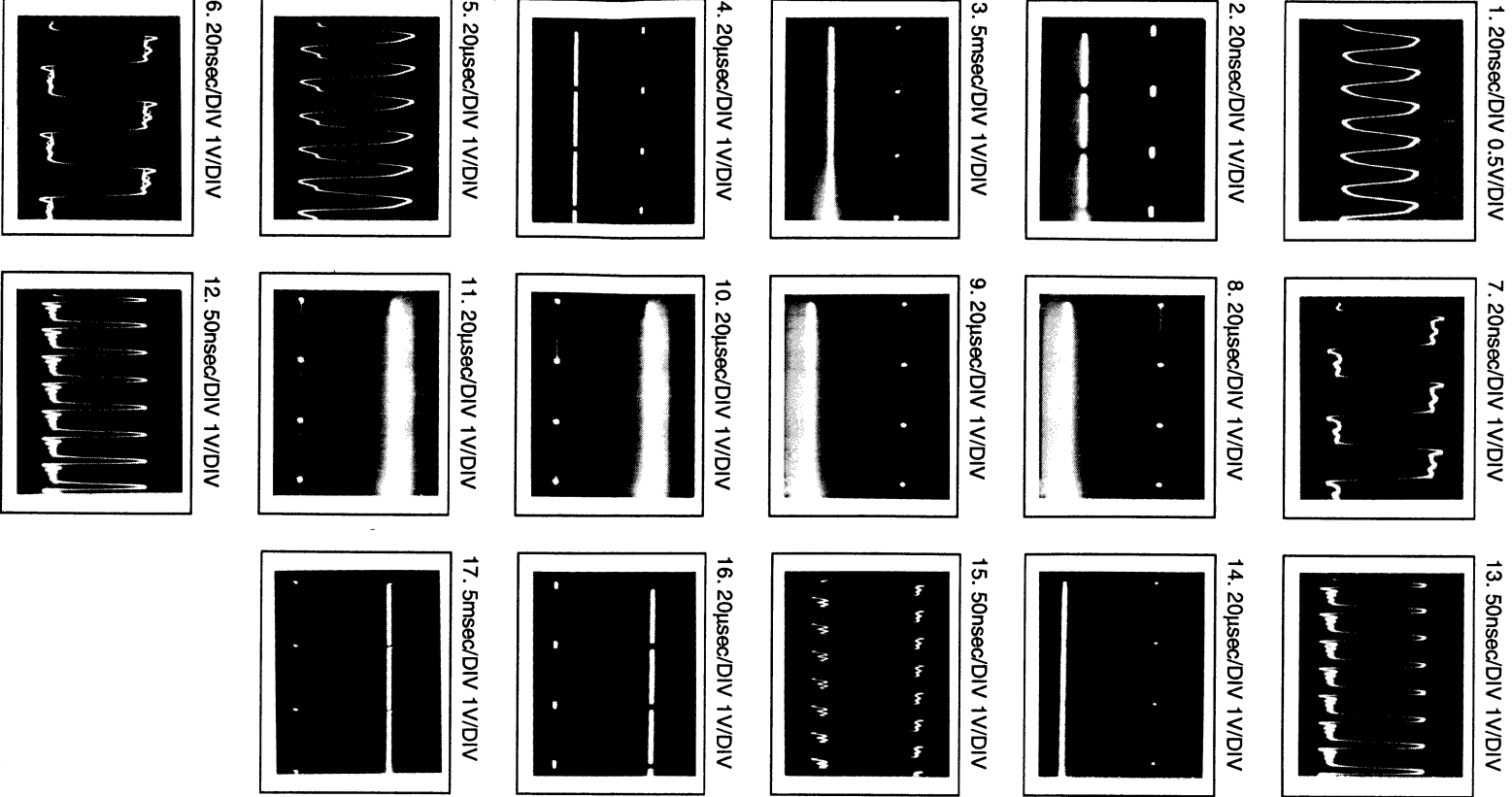
# CONDUCTOR VIEW OF DRIVE BOARD (WV-E550E)

< Index >  
DRIVE BOARD

IC3	B1
IC7	C3
IC8	B1
IC9	B1
IC11	C3
IC12	C1
IC15	B3
IC16	B1
IC17	B1
IC18	B1
IC19	B3
Q1	A3
Q2	C2
Q3	C2
Q4	C2
Q5	C2
Q6	C2
Q7	A2
Q8	A2
Q9	A2
D1	A1
D2	A1
D3	C2
D4	A2
D5	A2
D6	A2
D7	C3
D8	B1



DRIVE BOARD



< Index >  
DRIVE BOARD

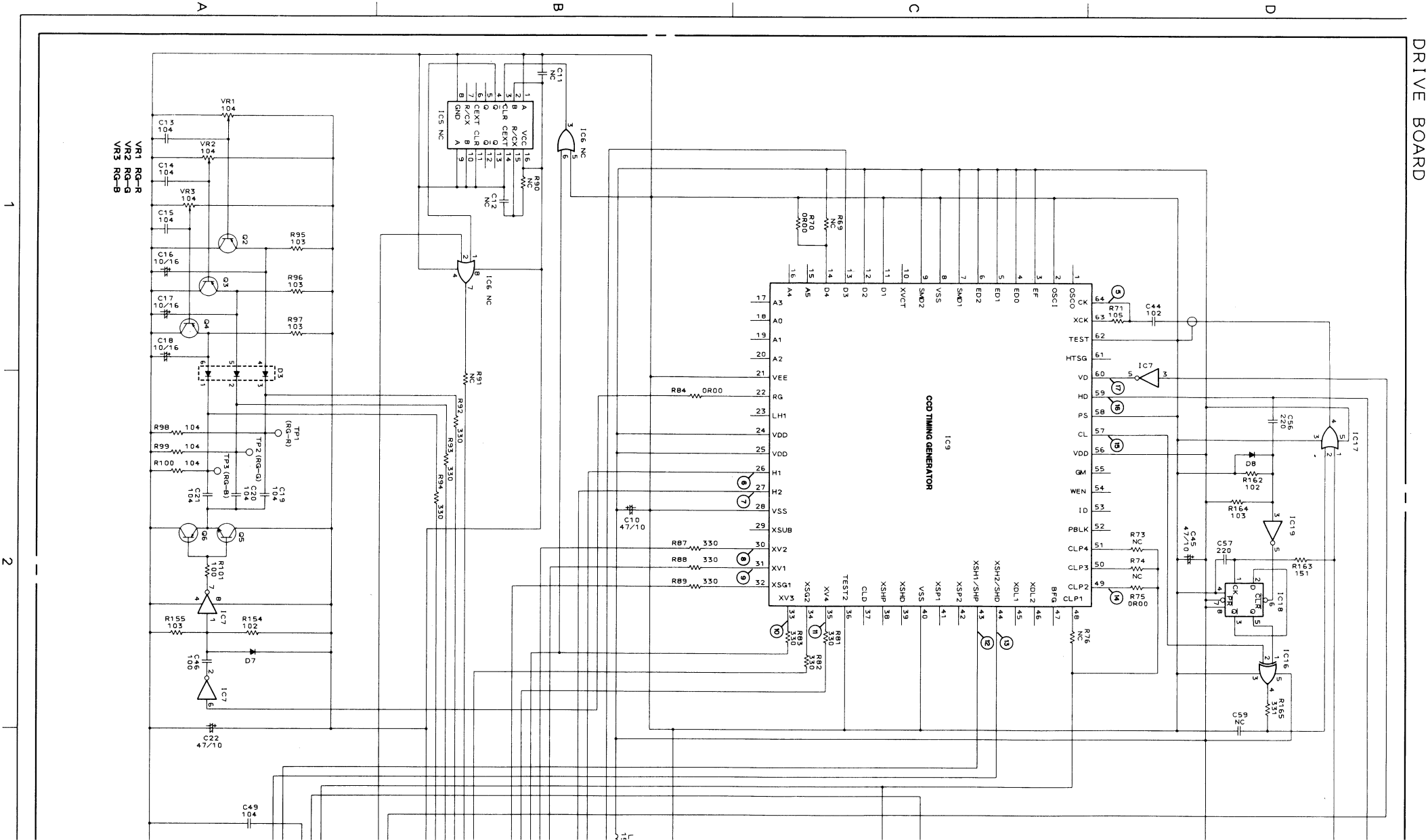
IC3	C4
IC7	A2, D2
IC8	A5
IC9	C2
IC11	A3, A4
IC12	B5, C6
IC15	A4, B4, C5
IC16	D2
IC17	D2
IC18	D2
IC19	C3, D2, D3
Q1	A1
Q2	A1
Q3	A1
Q4	A1
Q5	A2
Q6	A2
Q7	A5
Q8	A5
Q9	A5
D1	D3
D2	D4
D3	A1
D4	A5
D5	A5
D6	A6
D7	A2
D8	D2

DRIVE BOARD

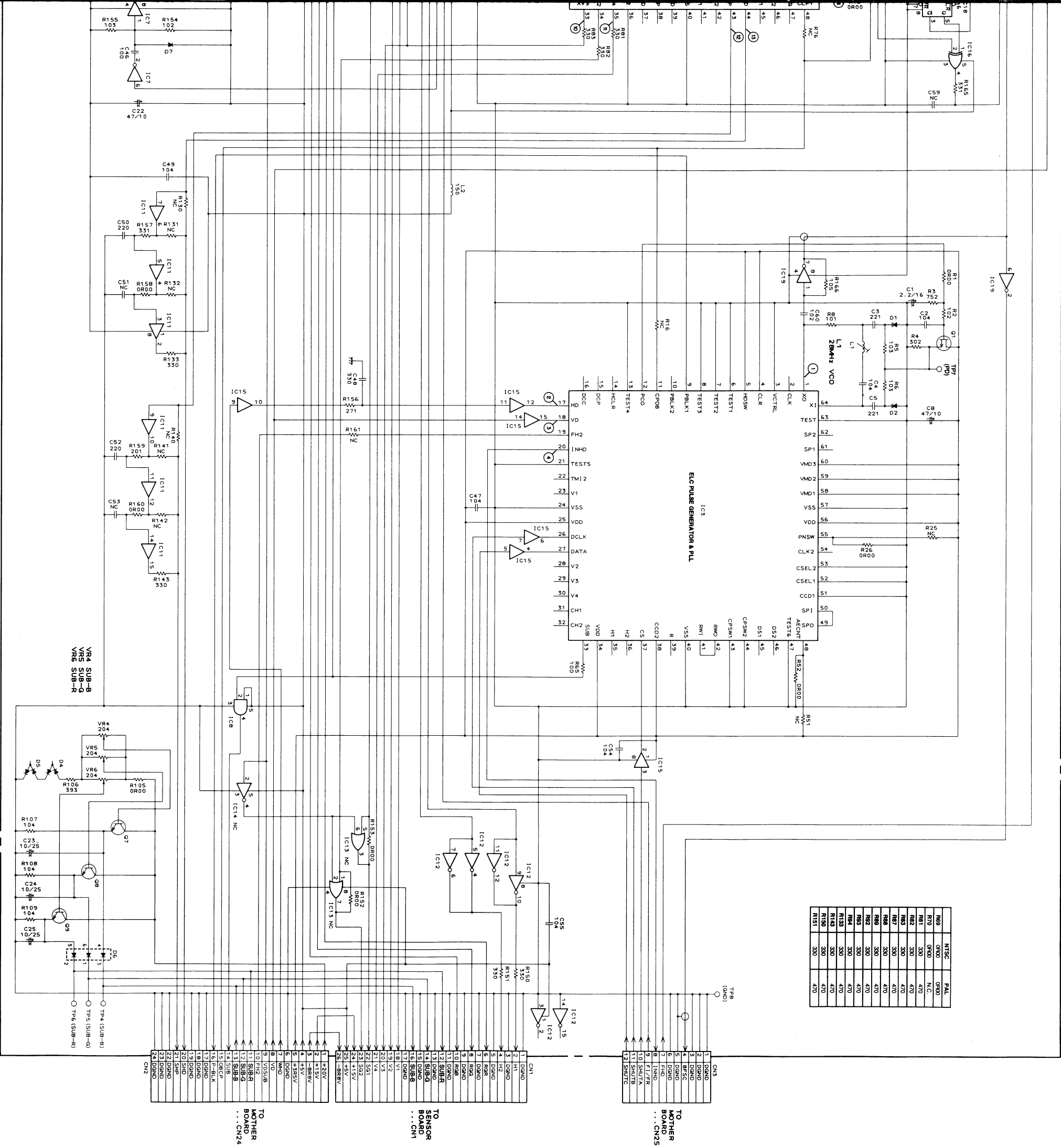
IC3	IC9	IC3	IC9
Pin 1	1.7	3.4	4.5
A2	1.7	3.4	4.5
A5	3	3.5	4.5
C2	4	3.5	4.5
A3, A4	4	3.5	4.5
B5, C6	5	3.5	4.5
A4, B4, C5	6	3.5	4.5
D2	7	3.5	4.5
D2	8	3.5	4.5
D2	9	3.5	4.5
C3, D2, D3	10	3.5	4.5
A1	11	3.5	4.5
A1	12	3.5	4.5
A1	13	3.5	4.5
A2	14	3.5	4.5
A5	15	3.5	4.5
A5	16	3.5	4.5
A5	17	3.5	4.5
D3	18	3.5	4.5
D4	19	3.5	4.5
A1	20	3.5	4.5
A5	21	3.5	4.5
A5	22	3.5	4.5
A6	23	3.5	4.5
A2	24	3.5	4.5
D2	25	3.5	4.5
D3	26	3.5	4.5
A1	27	3.5	4.5
A5	28	3.5	4.5
A5	29	3.5	4.5
A6	30	3.5	4.5
A2	31	3.5	4.5
D2	32	3.4	4.7

IC7	IC8	IC11	IC12	IC15	IC16	IC17	IC18	IC19
Pin 1	4.7	4.9	4.9	3.5	2.3	2.2	2.3	2.3
A2	1.3	3.4	1.1	4.9	3.5	2.4	2.4	2.4
A5	3	0.6	1.1	1.2	4.9	0	2.4	2.4
C2	4	4.8	4.8	1.1	2.6	3.4	0	3.3
A3, A4	5	4.2	4.9	1.2	2.3	4.8	4.8	2.4
B5, C6	6	3.4	1.2	2.6	3.4		4.9	2.4
A4, B4, C5	7	0.2	1.1	2.3	5.0		4.9	2.4
D2	8	0	0	0	0		4.9	2.4
D2	9	0	0	0	0		4.9	2.4
C3, D2, D3	10	0	0	0	0		4.9	2.4
A1	11	0	0	0	0		4.9	2.4
A1	12	0	0	0	0		4.9	2.4
A1	13	0	0	0	0		4.9	2.4
A2	14	0	0	0	0		4.9	2.4
A5	15	0	0	0	0		4.9	2.4
A5	16	0	0	0	0		4.9	2.4
A5	17	0	0	0	0		4.9	2.4
D3	18	0	0	0	0		4.9	2.4
D4	19	0	0	0	0		4.9	2.4
A1	20	0	0	0	0		4.9	2.4
A5	21	0	0	0	0		4.9	2.4
A5	22	0	0	0	0		4.9	2.4
A6	23	0	0	0	0		4.9	2.4
A2	24	0	0	0	0		4.9	2.4
D2	25	0	0	0	0		4.9	2.4
D3	26	0	0	0	0		4.9	2.4
A1	27	0	0	0	0		4.9	2.4
A5	28	0	0	0	0		4.9	2.4
A5	29	0	0	0	0		4.9	2.4
A6	30	0	0	0	0		4.9	2.4
A2	31	0	0	0	0		4.9	2.4
D2	32	0	0	0	0		4.9	2.4

B	C	E
Q1 (G) 1.8 (D) 3.5 (S) 2.1		
2	1.1	0
3	3.4	0
4	3.5	0
5	0.6	4.8
6	0.6	1.6
7	13.7	18.6
8	13.7	18.6
9	13.9	18.6

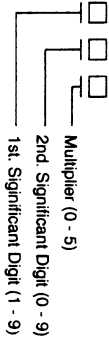


# M OF DRIVE BOARD (WV-E550E)



	NTSC	PAL
R69	0R00	0R00
R70	0R00	N.C.
R81	330	470
R82	330	470
R83	330	470
R84	330	470
R85	330	470
R86	330	470
R87	330	470
R88	330	470
R89	330	470
R90	330	470
R91	330	470
R92	330	470
R93	330	470
R94	330	470
R95	330	470
R96	330	470
R97	330	470
R98	330	470
R99	330	470
R100	330	470

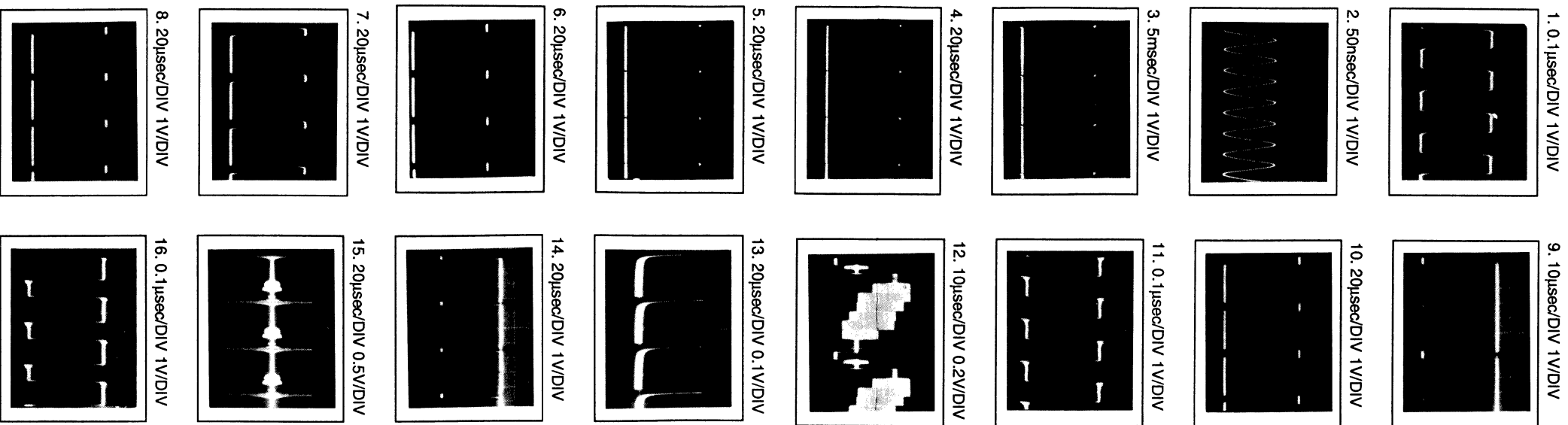
Note: The value indicated in the schematic diagram should be read as follows:



<Example>  
For Resistor:  
330 → 33 x 10<sup>0</sup> = 33 Ω  
561 → 56 x 10<sup>1</sup> = 560 Ω  
123 → 12 x 10<sup>3</sup> = 12K Ω  
0R00 = 0 Ω

For Capacitor:  
820 → 82 x 10<sup>0</sup> = 82 pF  
102 → 10 x 10<sup>2</sup> = 1000 pF = 0.001 μF  
104 → 10 x 10<sup>4</sup> = 100000 pF = 0.1 μF  
The suffix attached to capacitance indicates a type of capacitor.

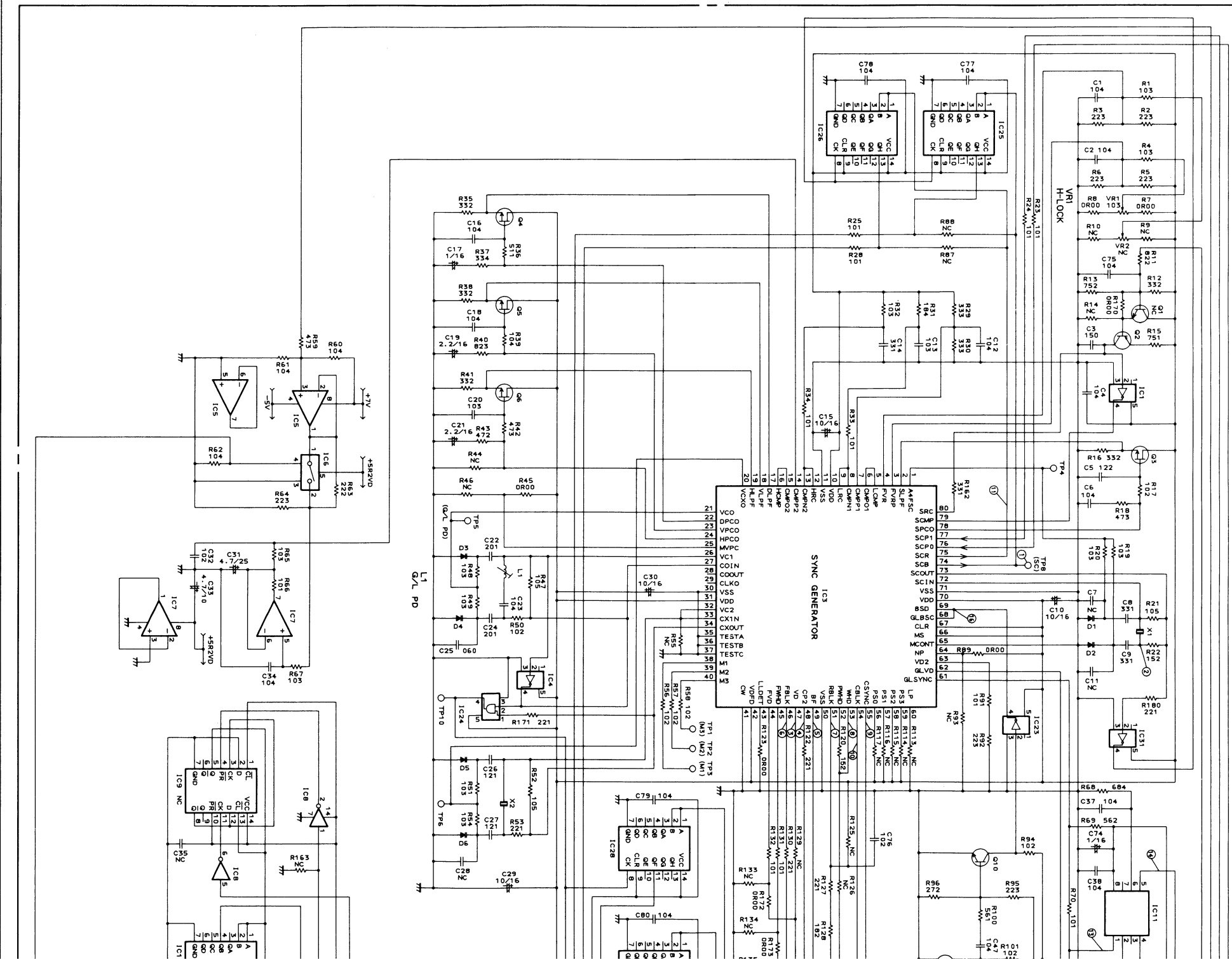
## SYNC BOARD



## < Index> SYNC BOARD

[illegible]

SYNC BOARD



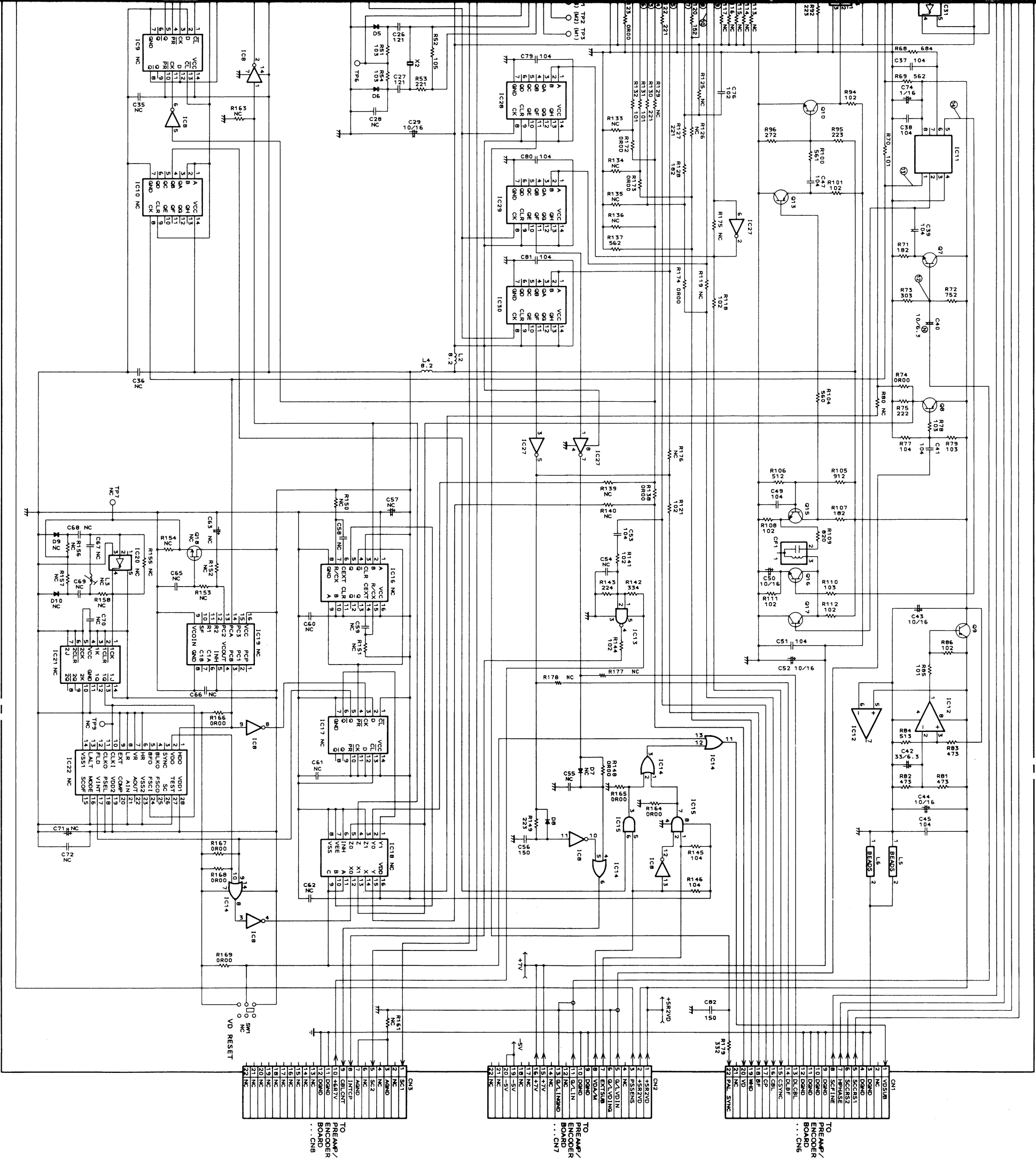
SYNC BOARD				
	IC1	IC4	IC5	IC13
Pin1	-	1.3	3.1	2.7
2	0.4	0	3.1	2.7
3	0	0	3.1	0
4	5.0	5.0	-5.2	6.3
5	5.0	5.0	0	6.7
6			0	
7			0	
8			7.0	

[illegible]

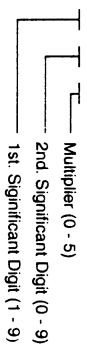
	IC6	IC7	IC8	IC11	IC12	IC14	IC23	IC24
Ph1	3.1	4.5	0	0.1	4.4	0	-	1.1
2	2.8	4.5	5.0	1.5	2.6	0	5.7	5.0
3	0	0	0	0	2.6	0	0	0
4	0	0	5.0	0	0	4.0	0	0
5	5.2	2.8	0.2	3.9	5.2	0.2	5.0	5.0
6		2.8	4.8	1.3	0	4.0		
7			2.8	0	5.0	4.0	0	
8		5.2	5.0	5.0	5.2	0		
9			0		0	0		
10			0.2		0	0		
11			4.1		0			
12								
13			4.9		0	0		
14			5.0			5.0		

	B	C
Q2	3.3	0.4
3 (G) 0.8 (D) 5.0 (S)		
5 (G) 0 (D) 5.0 (S)		
6 (G) 4.9 (D) 4.9 (S)		
7 3.9 5.0		
8 4.5 0.4		
9 4.5 5.0		
10 0.6 5.8		
13 1.9 2.1		
15 1.7 3.2		
16 2.8 2.2		
17 1.5 0		

# NAME OF SYNC BOARD (WV-E550E)



**Note:** The value indicated in the schematic diagram should be read as follows:



### <Example>

**For Resistor:**

$$\begin{array}{lcl} 330 \rightarrow 33 \times 10^0 & = & 33 \, \Omega \\ 561 \rightarrow 56 \times 10^1 & = & 560 \, \Omega \\ 123 \rightarrow 12 \times 10^3 & = & 12 \text{ k}\Omega \\ 0R00 = 0 \, \Omega \end{array}$$

**For Capacitor:**

820  $\rightarrow$   $82 \times 10^0 = 82 \text{ pF}$   
 102  $\rightarrow$   $10 \times 10^2 = 1000 \text{ pF} = 0.001 \text{ }\mu\text{F}$   
 104  $\rightarrow$   $10 \times 10^4 = 100000 \text{ pF} = 0.1 \text{ }\mu\text{F}$

The suffix attached to capacitance indicates a type of capacitor.

IC12	IC14	IC23	IC24
4	0	-	1,1
6	0	5,7	5,0
6	0	0	0
0	4,0	0	0
2	0,2	5,0	5,0
0	4,0		
0	0		
2	0		
0	0		
0	0		
0	0		
5,0			

	B	C	E
Q2	3.3	0.4	3.9
3	(G) 0.8	(D) 5.0	(S) 0.5
5	(G) 0	(D) 5.0	(S) 0.4
6	(G) 4.9	(D) 4.9	(S) 4.8
7	3.9	5.0	3.3
8	4.5	0.4	5.0
9	4.5	5.0	5.2
10	0.6	5.8	0
13	1.9	2.1	3.9
15	1.7	3.2	1.0
16	2.8	2.2	0.9
17	1.5	0	2.2

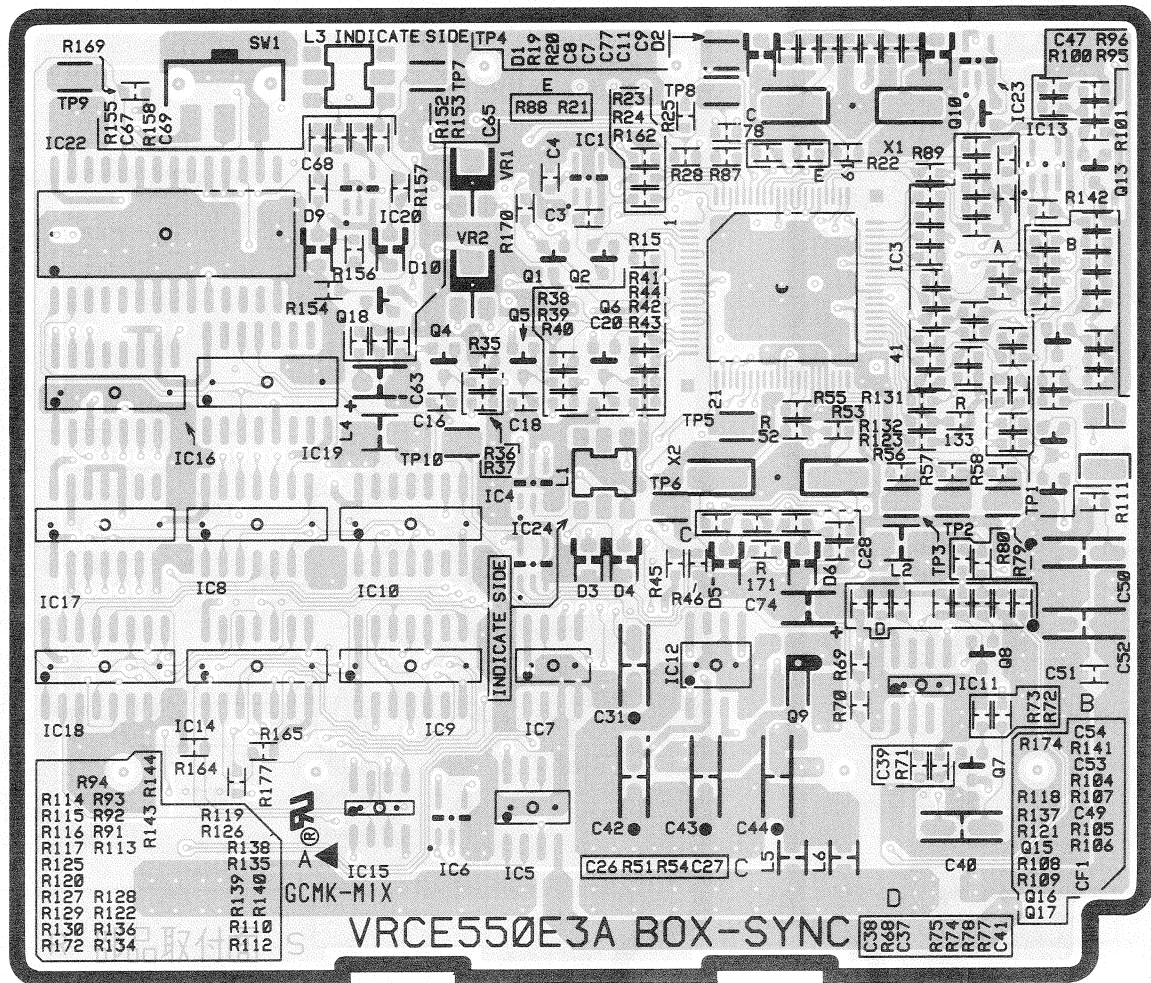


CONDUCTOR VIEW OF SYNC BOARD (WV-E550E)

< Index >  
SYNC BOARD

- IC1 B2
- IC3 B2
- IC4 B2
- IC5 A2
- IC6 A2
- IC7 A2
- IC8 B1
- IC11 A3
- IC12 A2
- IC13 B3
- IC14 A1
- IC15 A1
- IC23 C3
- IC24 B2
- IC25 C4
- IC26 C4
- IC27 B4
- IC28 B4
- IC29 B4
- IC30 B4
- IC31 B4
- Q2 B2
- Q3 B4
- Q4 B2
- Q5 B2
- Q6 B2
- Q7 A3
- Q8 A3
- Q9 A2
- Q10 C3
- Q13 B3
- Q15 B3
- Q16 B3
- Q17 B3
- D1 C2
- D2 C3
- D3 B2
- D4 B2
- D5 B2
- D6 B2
- D8 B5

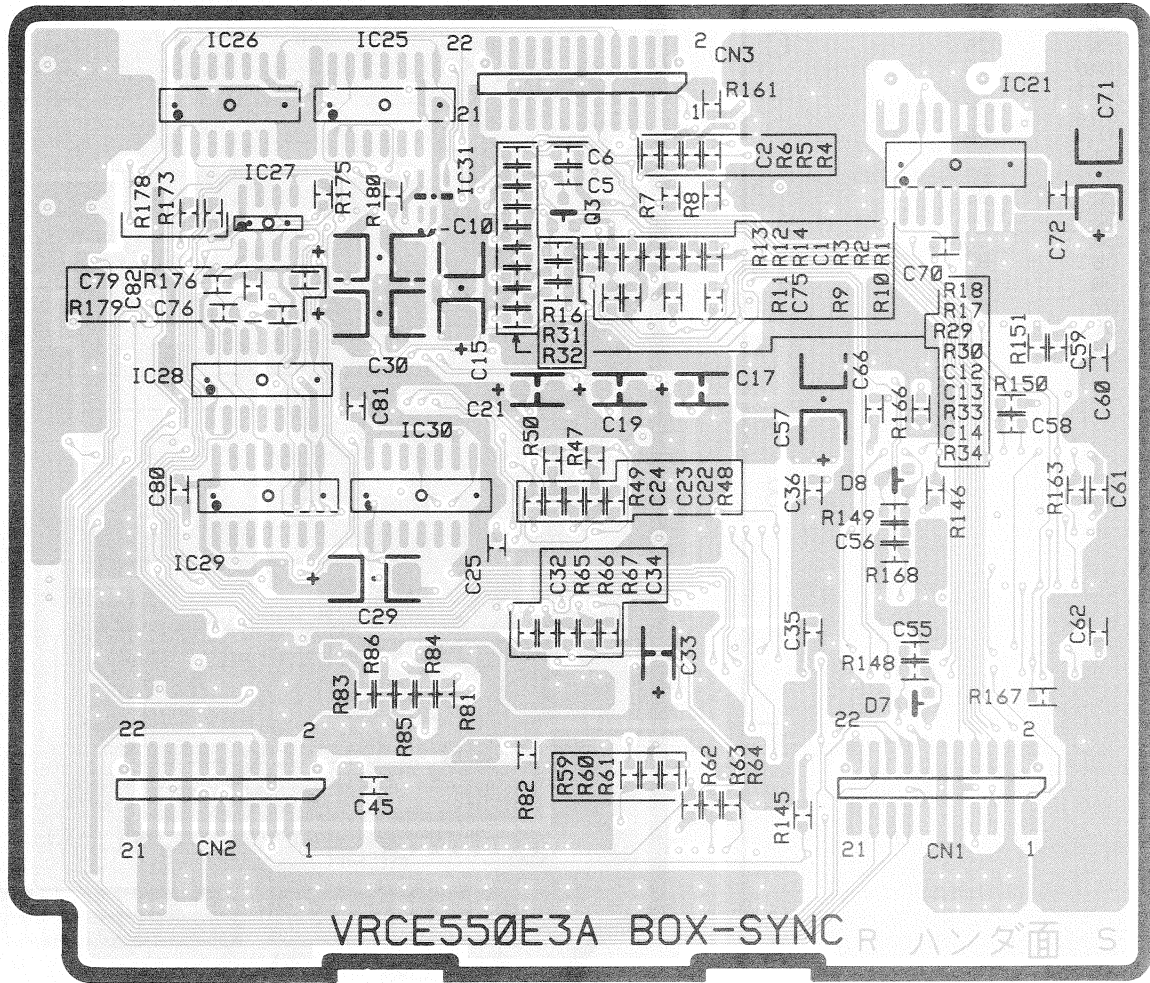
SYNC BOARD



COMPONENT SIDE  
INTERMEDIATE PATTERN

(COMPONENT SIDE VIEW)

SYNC BOARD



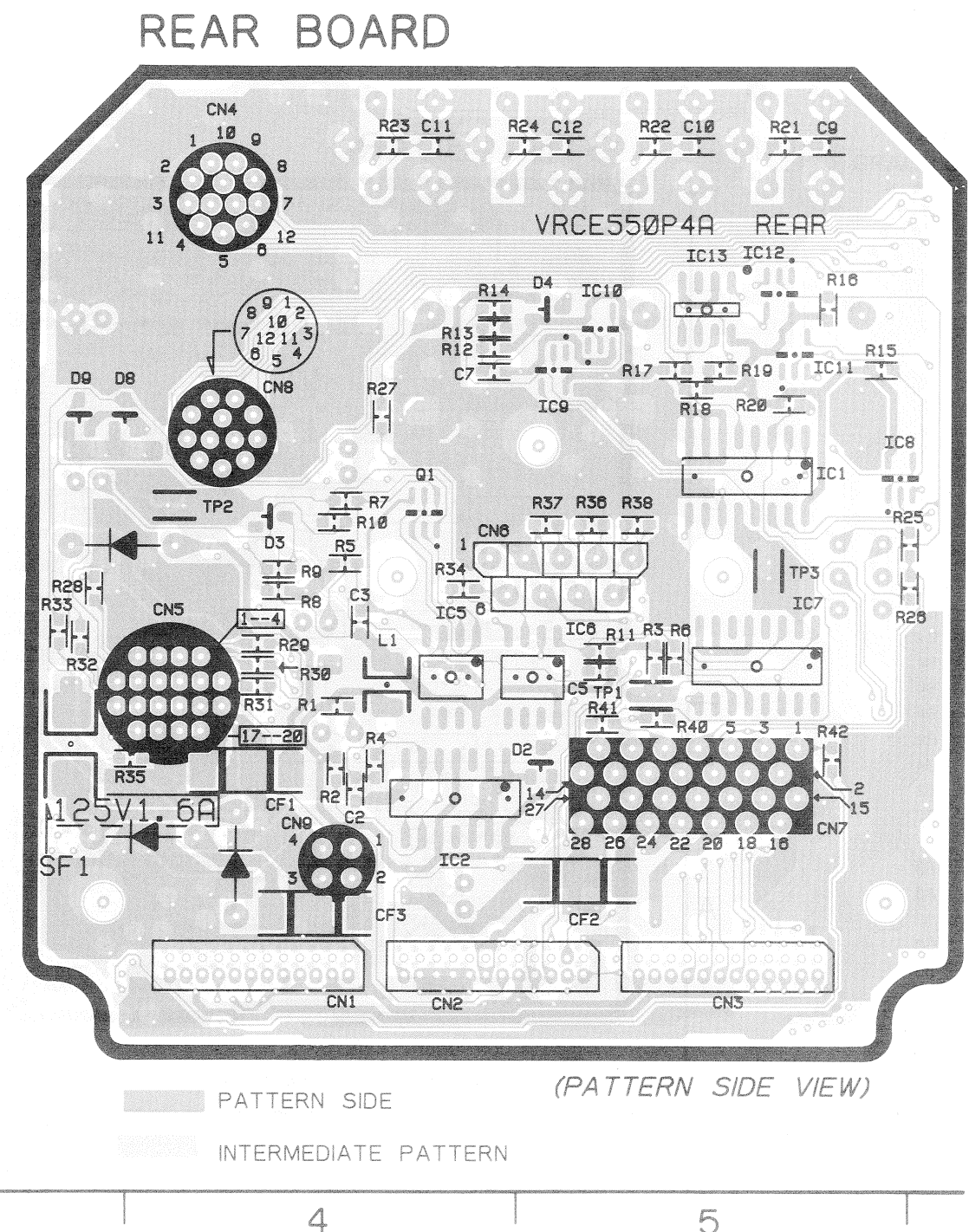
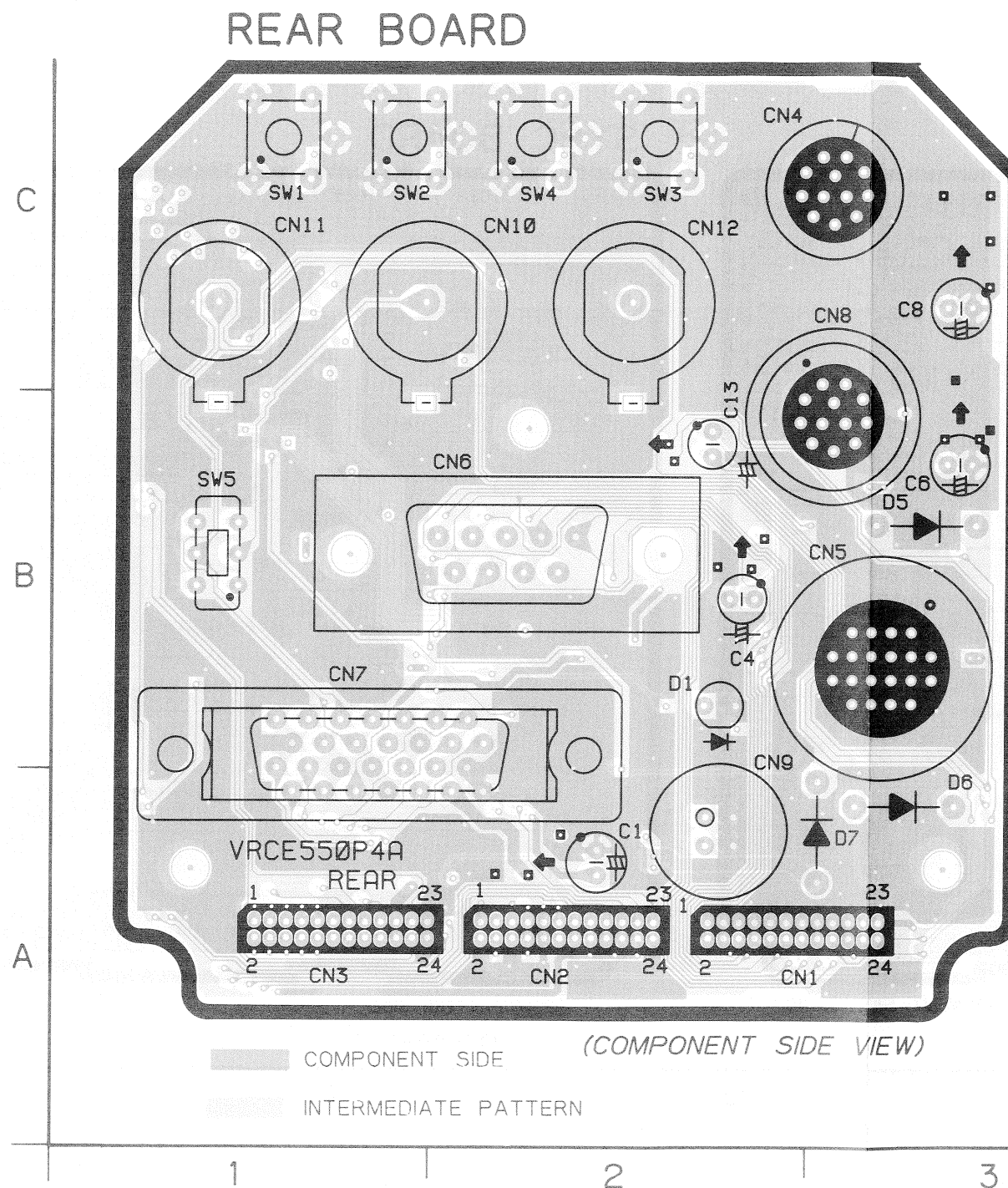
PATTERN SIDE  
INTERMEDIATE PATTERN

(PATTERN SIDE VIEW)

# CONDUCTOR VIEW OF REAR BOARD (WV-E550E)

## < Index > REAR BOARD

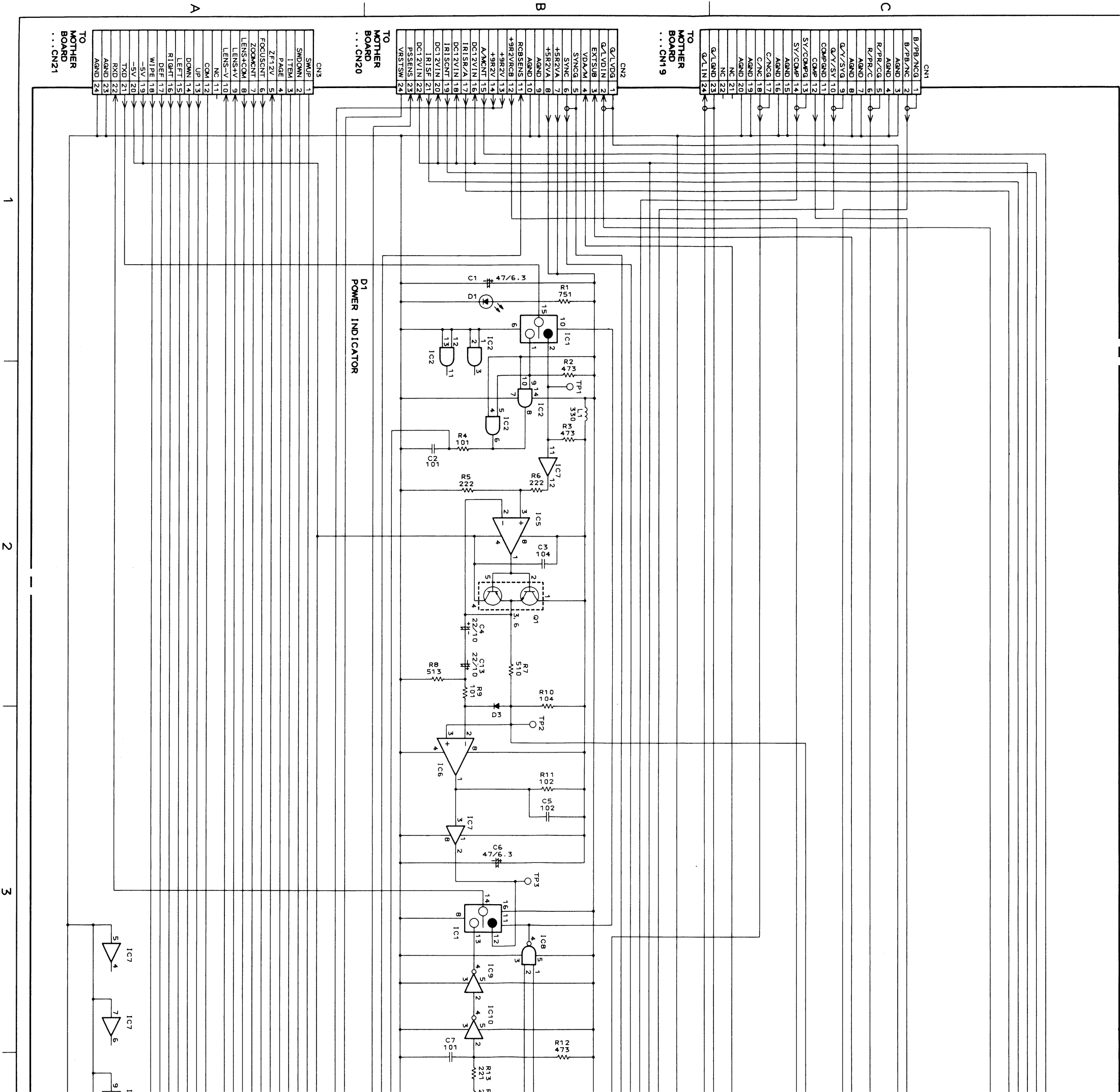
IC1	B5
IC2	A4
IC5	B4
IC6	B5
IC7	B5
IC8	B5
IC9	C5
IC10	C5
IC11	C5
IC12	C5
IC13	C5
Q1	B4
D1	B2
D2	B5
D3	B4
D4	C4
D5	B3
D6	A3
D7	A3
D8	B3
D9	B3





SCHEMATIC DIAGRAM OF REAR

REAR BOARD



< Index>

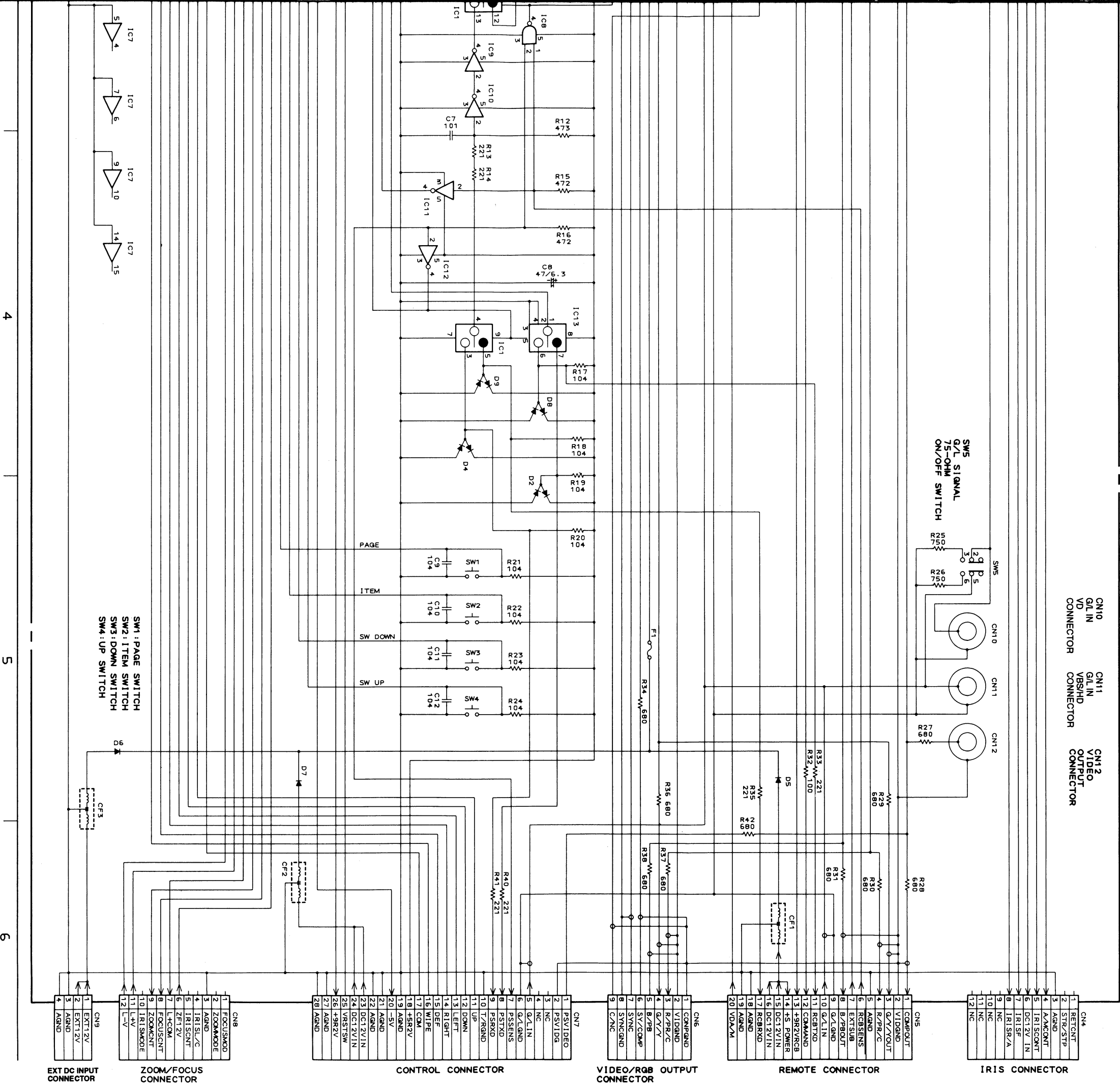
REAR BOARD

REAR BOARD

	IC1	IC2	IC5	IC6	IC7	IC8	IC9	IC10	IC11	IC12	IC13
Pin1	5.2	0	3.0	5.2	5.2	-	-	-	-	-	5.2
IC2	2	5.0	0	2.5	2.0	5.2	5.2	0	5.2	5.2	0
IC5	3	5.1	0	2.5	2.5	5.2	0	0	0	0	-
IC6	4	5.0	5.2	-	0	0	0	5.2	0	0	0
IC7	5	5.2	5.2	-	-	0	5.2	5.2	5.2	5.2	0
IC8	6	0	5.2	-	-	0	-	-	-	-	5.1
IC9	7	0	0	4.7	0	0	-	-	-	-	5.2
IC10	8	0	5.2	5.2	5.2	0	-	-	-	-	5.2
IC11	9	0	5.2	-	-	0	-	-	-	-	-
IC12	10	0	5.2	-	-	0	-	-	-	-	-
IC13	11	0	0	-	-	4.9	-	-	-	-	-
Q1	12	5.2	0	-	-	-	-	-	-	-	-
D1	13	5.2	0	-	-	-	-	-	-	-	-
D2	14	5.2	0	-	-	-	-	-	-	-	-
D3	15	5.2	0	-	-	-	-	-	-	-	-
D4	16	5.2	0	-	-	-	-	-	-	-	-
D5	17	5.2	0	-	-	-	-	-	-	-	-
D6	18	5.2	0	-	-	-	-	-	-	-	-
D7	19	5.2	0	-	-	-	-	-	-	-	-
D8	20	5.2	0	-	-	-	-	-	-	-	-
D9	21	5.2	0	-	-	-	-	-	-	-	-



# M OF REAR BOARD (WV-E550E)



4

5

6

SCHEMATIC DIAGRAM OF POW

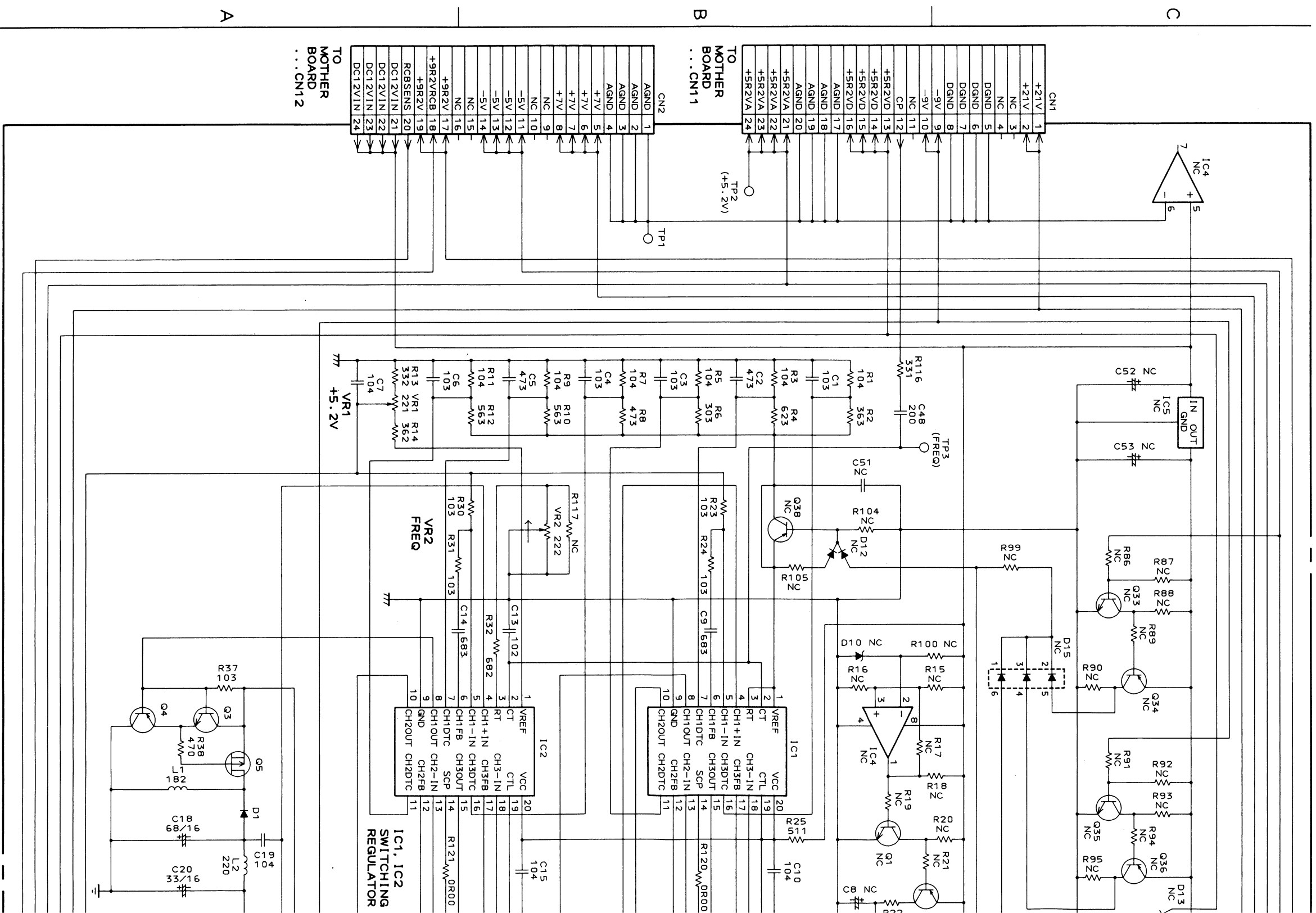
< Index>  
POWER BOARD

IC1	B2
IC2	B2
IC3	A4, B4
Q3	A2
Q4	A2
Q5	A2
Q6	B3
Q7	B3
Q8	C3
Q9	C4
Q10	B4
Q11	B3
Q12	B3
Q13	B3
Q14	B4
Q15	B4
Q16	B4
Q17	B3
Q18	B3
Q19	B3
Q20	B3
Q21	A3
Q22	A3
Q23	A3
Q24	A3
Q25	A4
Q26	A4
Q27	A4
Q28	A3
Q29	A3
Q30	A4
Q31	A4
Q39	A3
D1	A2
D2	B3
D3	B3
D4	B3
D5	A4
D6	A4
D8	A3
D9	A3

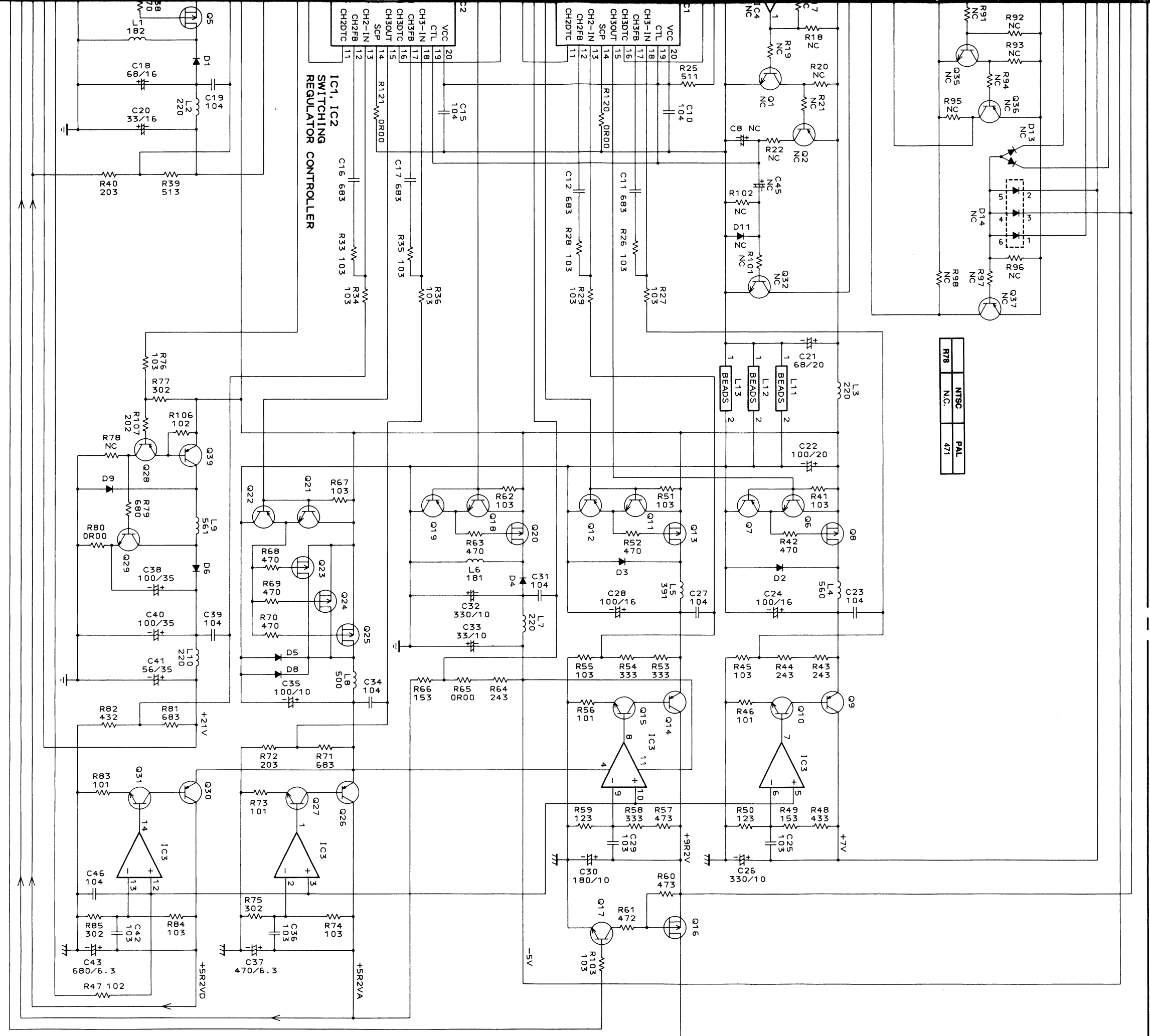
IC1	IC2	IC3
Pin1	2.5	2.5 0.7
2	1.6	1.6 1.2
3	2.5	1.3 1.2
4	1.2	1.2 5.5
5	1.2	1.2 1.2
6	1.4	1.5 1.2
7	1.5	1.6 0.6
8	9.4	10.2 0.3
9	0	0 1.2
10	9.0	7.9 1.2
11	1.9	1.7 -5.2
12	1.8	1.4 1.2
13	1.2	1.3 1.2
14	0	0 0.8
15	8.7	8.4
16	1.8	1.7
17	1.7	1.6
18	1.2	1.3
19	10.9	10.9
20	9.0	9.0

B	C	E
Q3	10.2	11.4 6.8
4	10.3	0 6.8
5	(G)7.2 (D)0	(S)11.4
6	8.7	11.4 4.5
7	8.7	0 4.5
8	(G)5.5 (D)7.3	(S)11.4
9	(G)7.3 (D)7.0	(S)5.6
10	0.6	6.6 0.1
11	9.1	11.4 2.7
12	9.1	0 2.7
13	(G)3.5 (D)9.5	(S)11.4
14	(G)9.5 (D)9.2	(S)8.9
15	0.3	8.9 0.4
16	(G)9.2 (D)-	(S)9.2
17	0	9.2 0
18	9.5	11.4 8.0
19	9.6	0 8.0
20	(G)8.3 (D)-	(S)11.4
21	8.4	11.4 6.1
22	8.4	0 6.1
23	(G)6.2 (D)5.6	(S)11.4
24	(G)6.2 (D)5.6	(S)11.4
25	(G)6.2 (D)5.6	(S)11.4
26	(G)4.9 (D)5.2	(S)5.5
27	0.6	4.9 0.1
29	(G)0.8 (D)11.4	(S)0.6
30	(G)4.9 (D)5.2	(S)5.5
31	0.8	4.5 0.2
33	0.2	11.4 0
34	-2.4	11.4 0
35	0.6	0 0
36	0	11.4 0
37	0.6	0 0
38	0	11.4 0
39	0.6	0 0
40	0	11.4 0
41	0.6	0 0
42	0	11.4 0
43	0	0 0.7
44	0	11.4 0

POWER BOARD

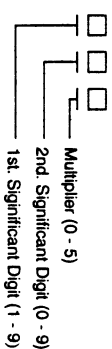


# RAM OF POWER BOARD (WV-E550E)



NTSC	PAL
R78	471

Note: The value indicated in the schematic diagram should be read as follows:



<Example>  
For Resistor:

330  $\rightarrow 33 \times 10^0 = 33 \Omega$   
561  $\rightarrow 56 \times 10^1 = 560 \Omega$   
123  $\rightarrow 12 \times 10^3 = 12k \Omega$   
0R00 = 0  $\Omega$

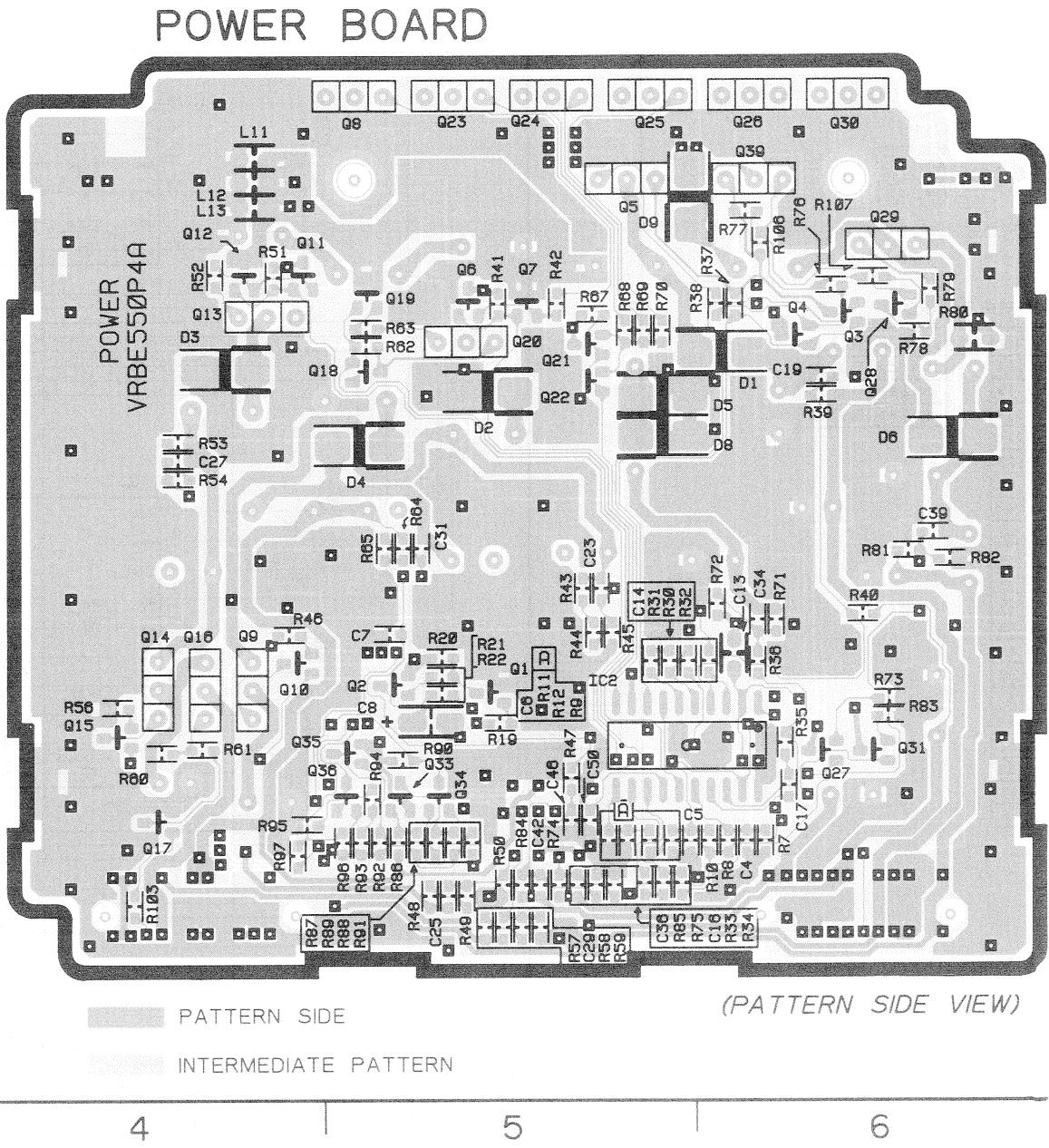
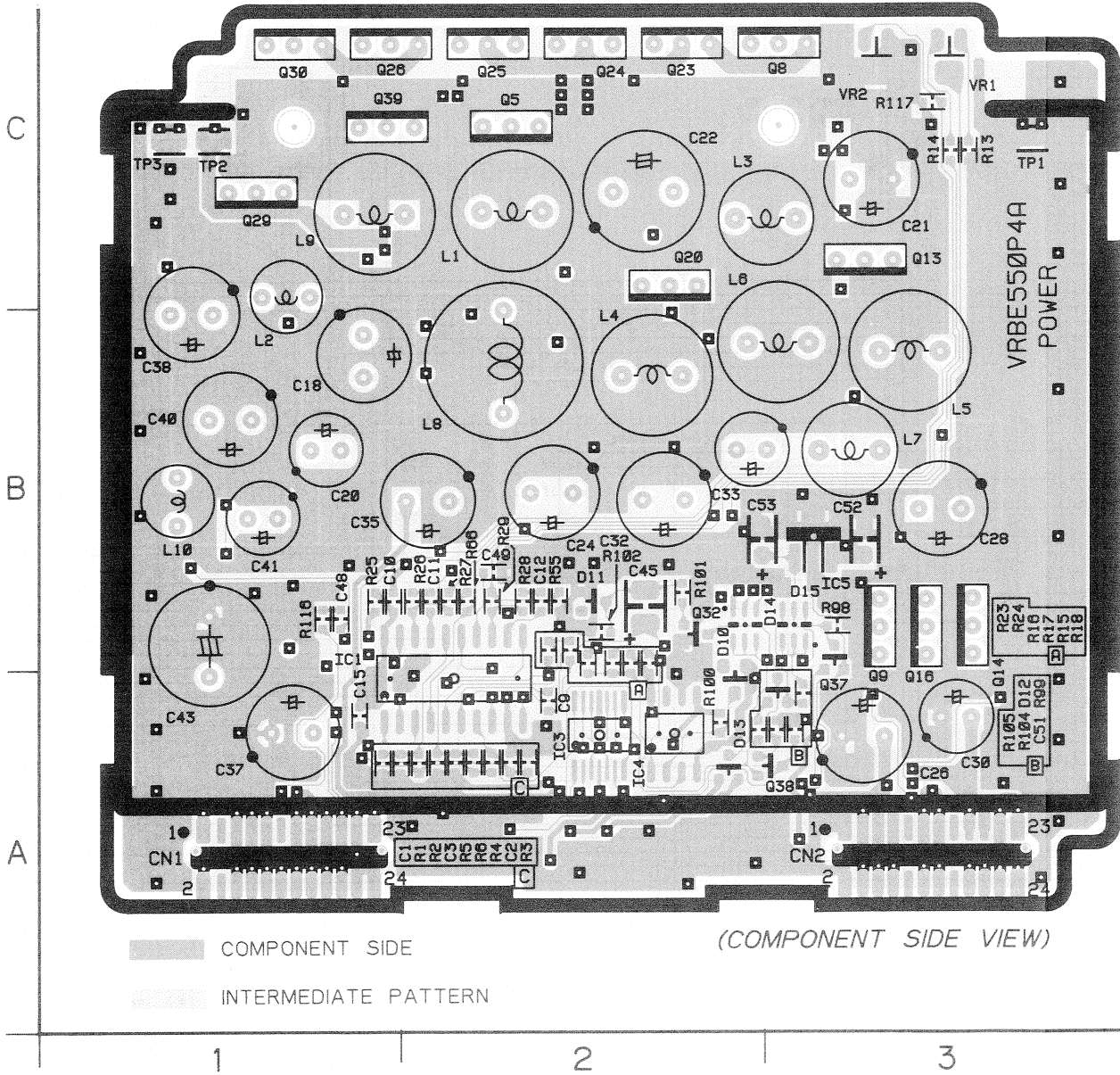
For Capacitor:

820  $\rightarrow 82 \times 10^0 = 82 pF$   
102  $\rightarrow 10 \times 10^2 = 1000 pF = 0.001 \mu F$   
104  $\rightarrow 10 \times 10^4 = 100000 pF = 0.1 \mu F$   
The suffix attached to capacitance indicates a type of capacitor.

# CONDUCTOR VIEW OF POWER BOARD (WV-E550E)

< Index >  
POWER BOARD

IC1	B1
IC2	B5
IC3	A2
Q3	O6
Q4	O6
Q5	C2
Q6	C5
Q7	C5
Q8	C3
Q9	B3
Q10	B4
Q11	C4
Q12	C4
Q13	C3
Q14	B3
Q15	A4
Q16	B3
Q17	A4
Q18	B5
Q19	O5
Q20	C2
Q21	B5
Q22	B5
Q23	C2
Q24	C2
Q25	C2
Q26	C1
Q27	A6
Q28	O6
Q29	C1
Q30	C1
Q31	A6
Q39	C1
D1	O6
D2	B5
D3	C4
D4	B5
D5	B5
D6	B6
D8	B5
D9	O5





# SCHEMATIC DIAGRAM OF SENSOR BOARD (WV-E550E)

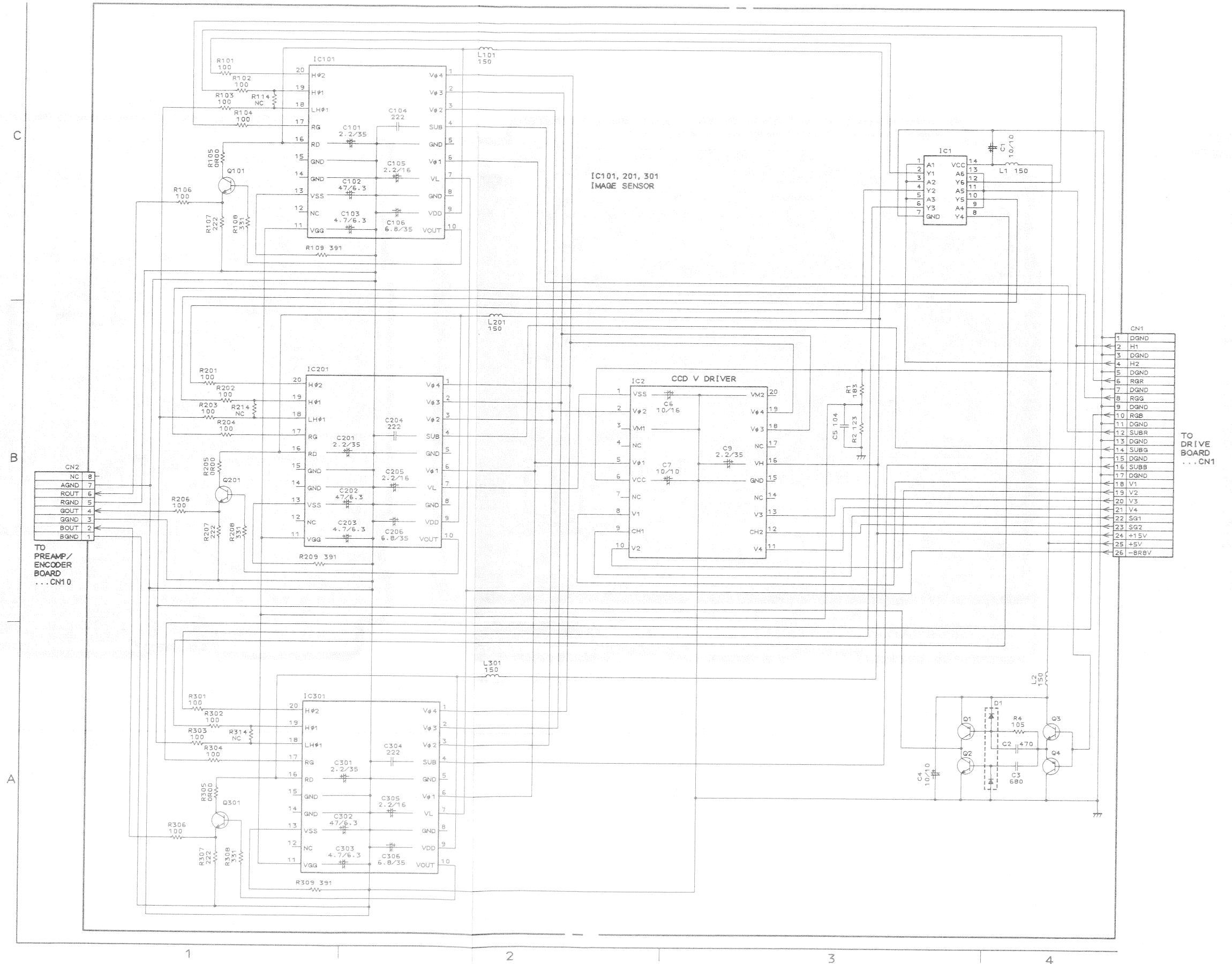
## SENSOR BOARD

### < Index > SENSOR BOARD

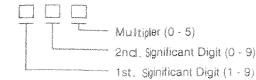
IC1	C3
IC2	B3
IC101	C1
IC201	B1
IC301	A1
Q1	A3
Q2	A3
Q3	A4
Q4	A4
Q101	C11
Q201	B1
Q301	A1
D1	A4

### SENSOR BOARD

IC2	B	C	E
Pin1 -8.7	Q101 8.7	14.9	8.0
2 -0.3	201 8.3	14.9	7.5
3 25.7	301 8.5	14.9	7.8
4 27.0			
5 -0.3			
6 4.9			
7 24.0			
8 0.2			
9 4.9			
10 2.9			
11 4.6			
12 1.5			
13 4.6			
14 2.0			
15 0			
16 14.9			
17 2.2			
18 -8.3			
19 -8.3			
20 0			



Note: The value indicated in the schematic diagram should be read as follows:



#### <Example>

For Resistor:  
330 →  $33 \times 10^3 = 33 \text{ k}\Omega$   
561 →  $56 \times 10^4 = 560 \text{ k}\Omega$   
123 →  $12 \times 10^3 = 12 \text{ k}\Omega$   
0R00 = 0  $\Omega$

For Capacitor:  
820 →  $82 \times 10^0 = 82 \text{ pF}$   
102 →  $10 \times 10^2 = 1000 \text{ pF} = 0.001 \mu\text{F}$   
104 →  $10 \times 10^4 = 100000 \text{ pF} = 0.1 \mu\text{F}$   
The suffix attached to capacitance indicates a type of capacitor.

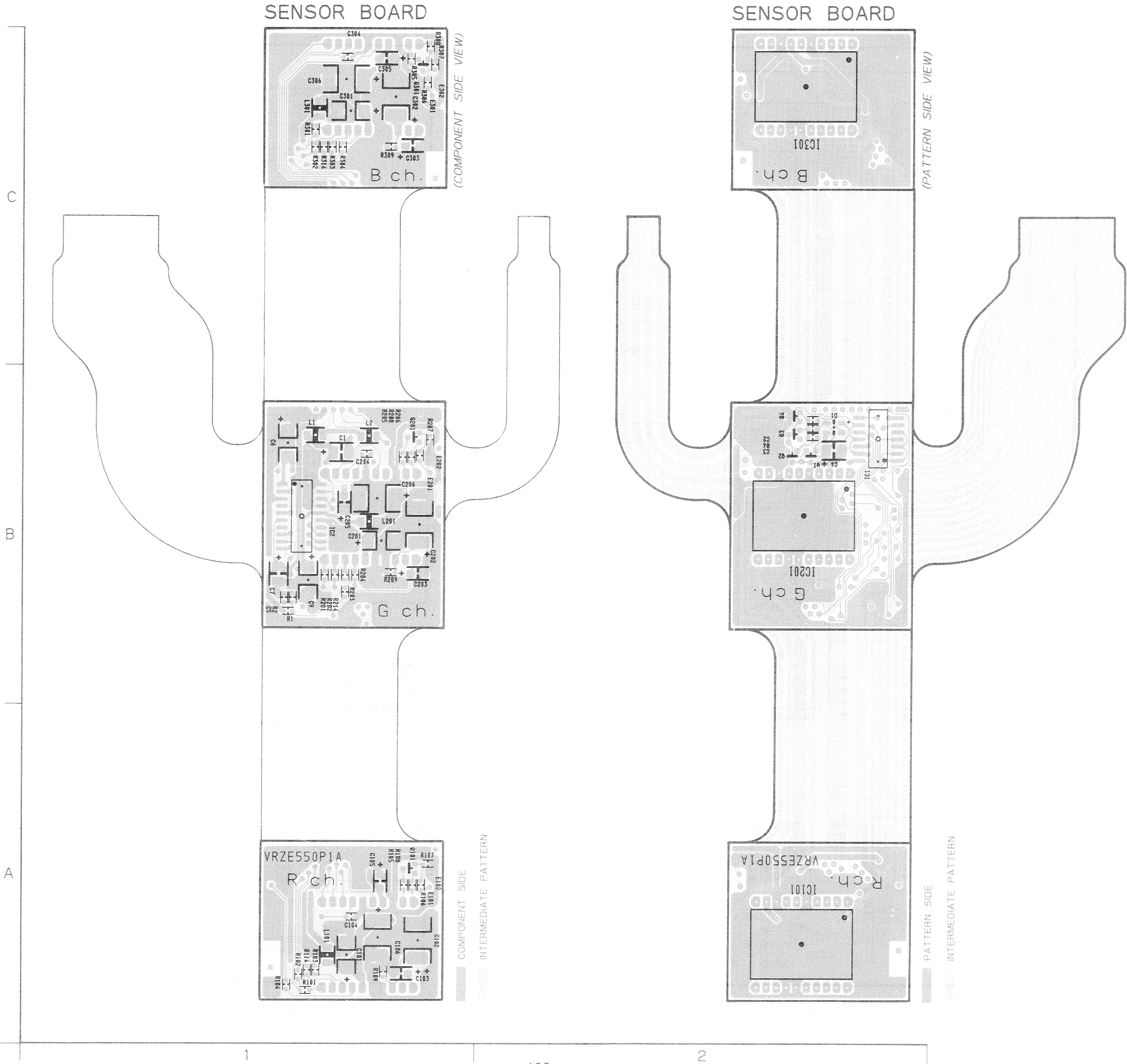
#### Note:

All parts mounted on the Sensor Board are not supply individually.  
Please order as the Head Optical Assy, part number YWV0EA0282AN.

CONDUCTOR VIEW OF SENSOR BOARD (WV-E550E)

< Index >  
SENSOR BOARD

IC1	B2
IC2	B1
IC101	A2
IC201	B2
IC301	C2
Q1	B2
Q2	B2
Q3	B2
Q4	B2
Q101	A1
Q201	B1
Q301	C1
D1	B2





# AUDIO CONNECTOR BOARD

# INTERFACE BOARD

(COMPONENT SIDE VIEW)

IC1	C4
IC2	C4
D1	C5





CONDUCTOR VIEW OF AUDIO/AUDIO MOTHER BOARD (WV-PS550)

AUDIO BOARD

< Index >

AUDIO BOARD

- IC1

IC2

IC3

IC4

IC5

IC6

IC7

Q1

Q2

Q3

Q4

Q5

Q6

Q7

Q8

Q9

Q10

Q12

Q13

D1

D2

D3

D4

D5

D6

D7
- B2

B2

C3

A2

A2

A1

D3

C2

C2

D1

C1

C1

B3

C3

C3

D2

D2

D2

D1

C2

C2

B2

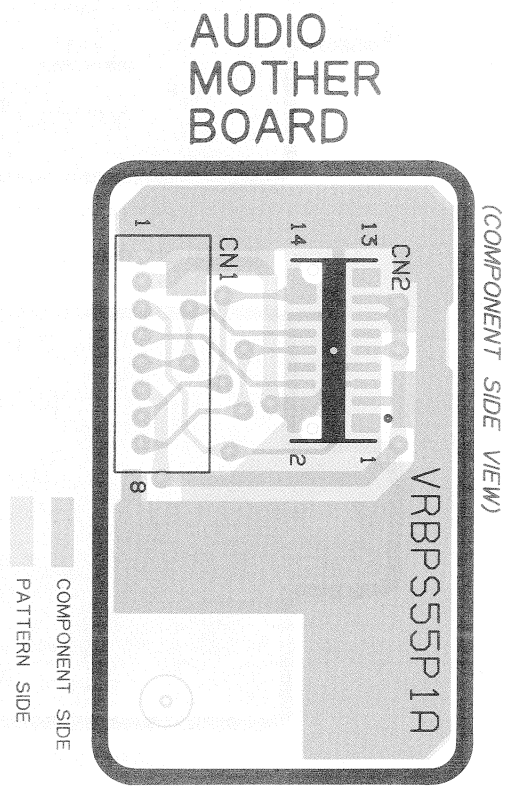
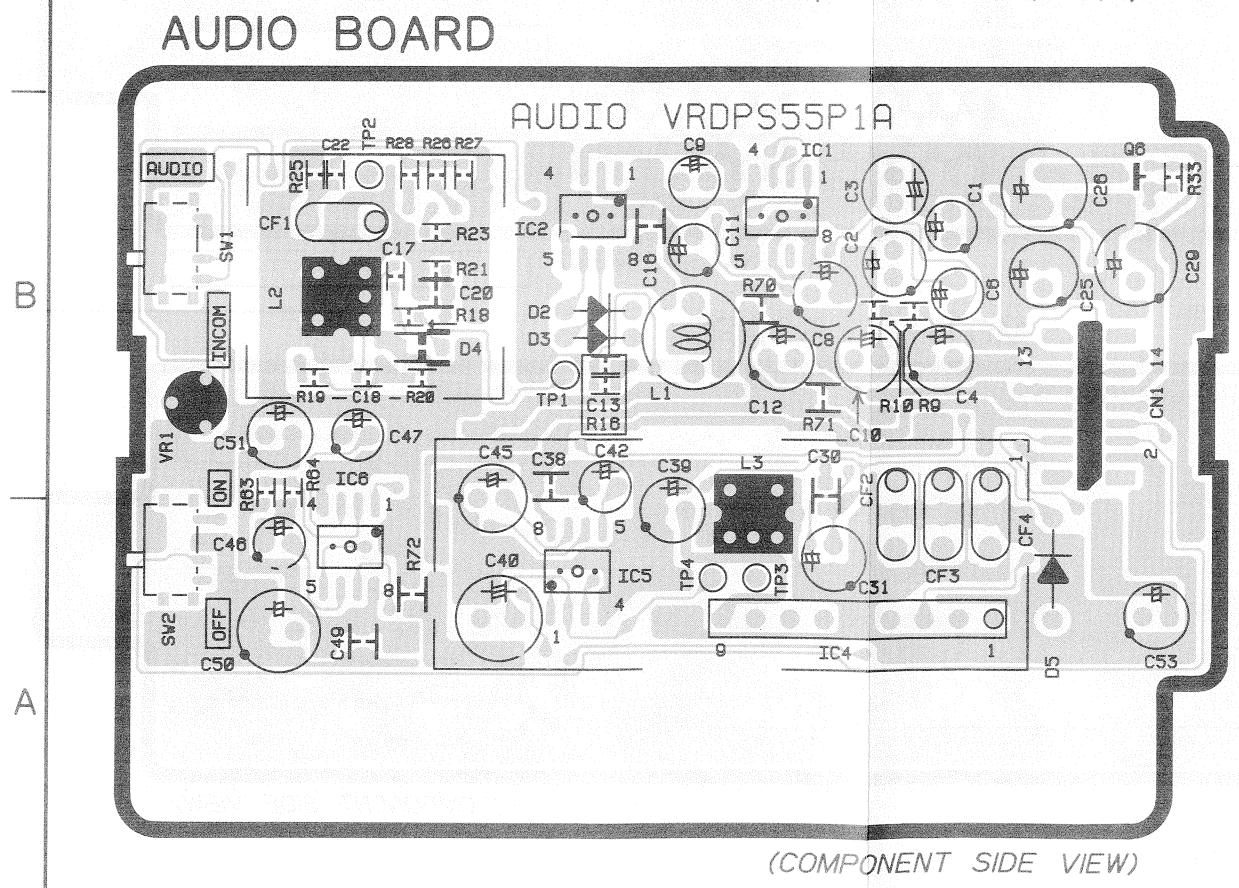
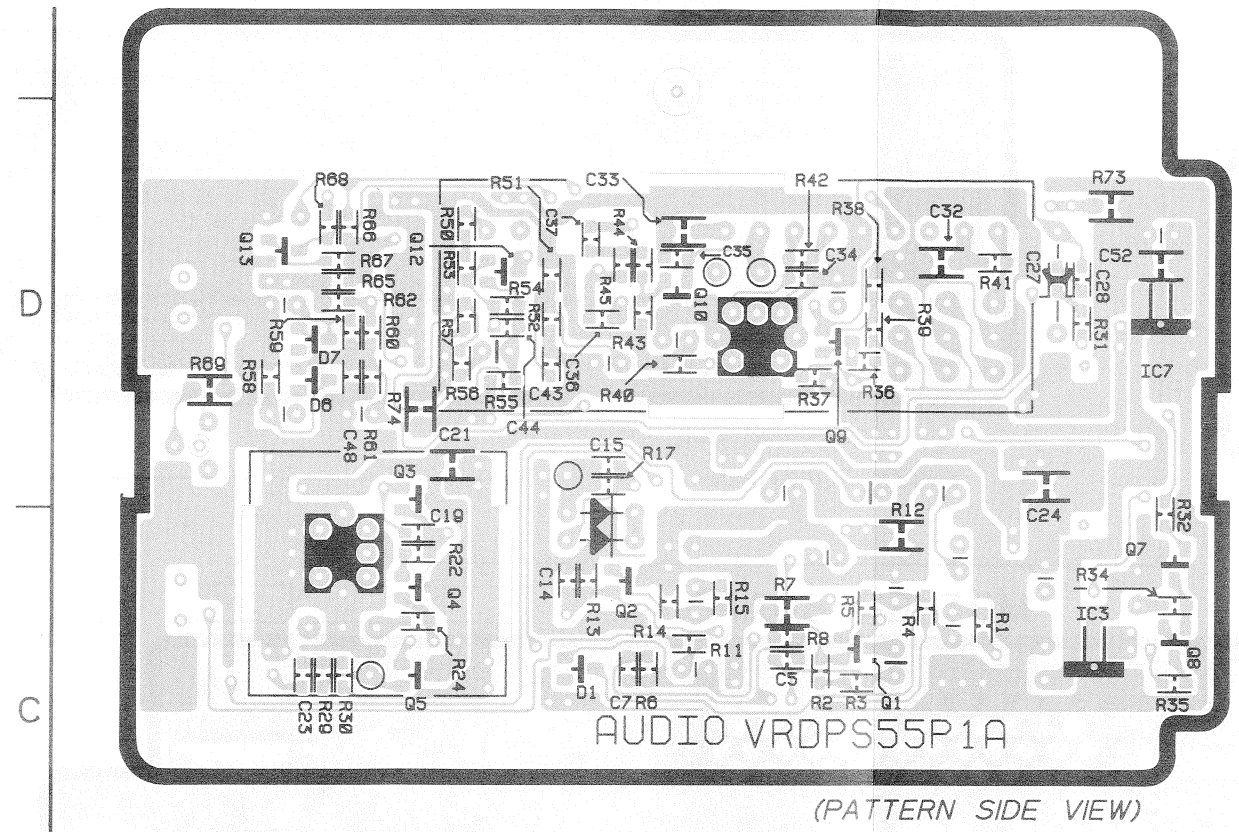
B2

B1

A3

D1

D1



# SCHEMATIC DIAGRAM OF AUDIO/AUDIO MOTHER BOARD (WV-PS550)

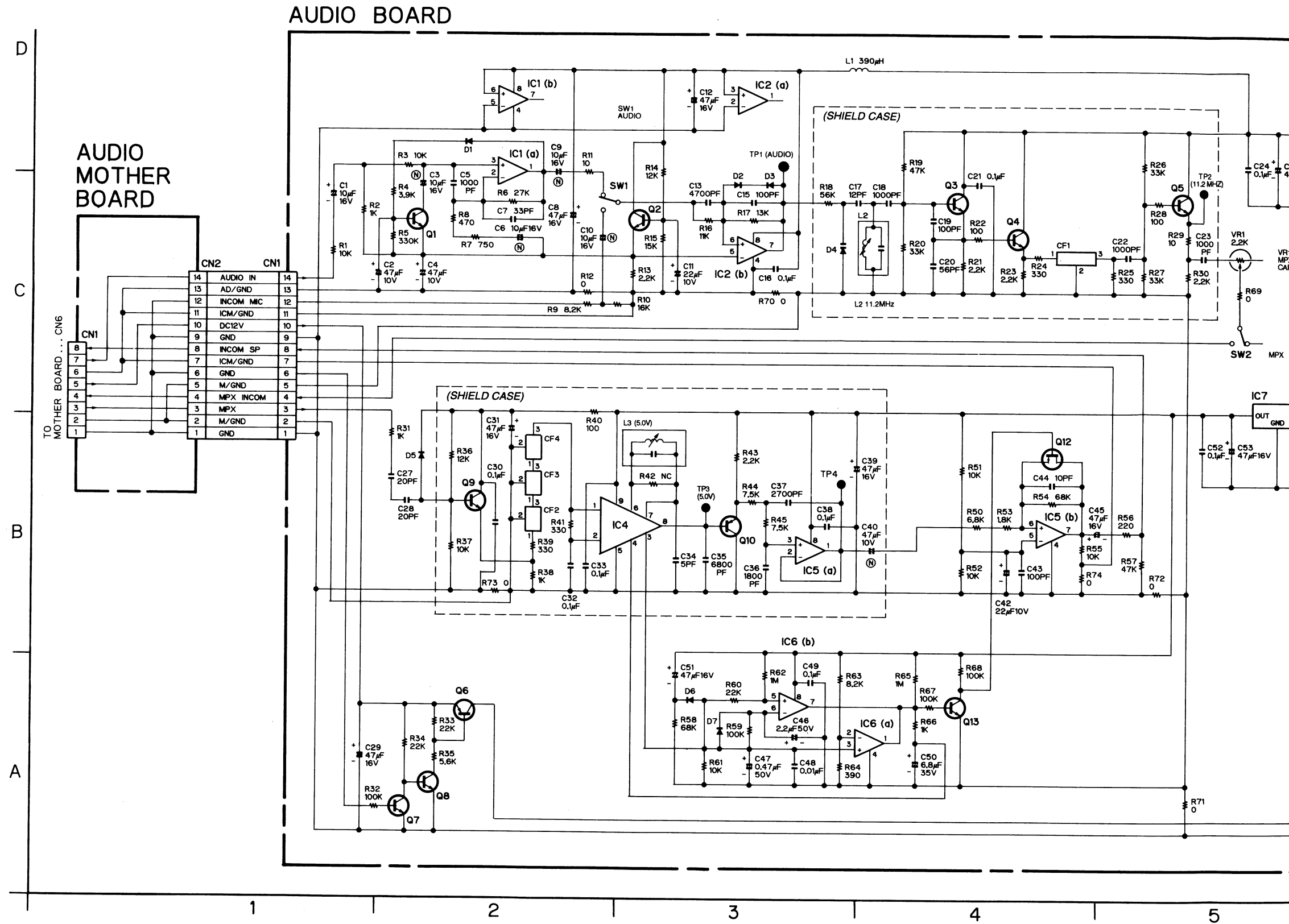
## < Index > AUDIO BOARD

IC1	C2, D2
IC2	C3, D3
IC3	D5
IC4	B2, B3
IC5	B3, B4
IC6	A3, A4
IC7	B5, C5
Q1	C2
Q2	C3
Q3	C4
Q4	C4
Q5	C5
Q6	A2
Q7	A2
Q8	A2
Q9	B2
Q10	B3
Q12	B4
Q13	B4
D1	D2
D2	C3
D3	C3
D4	C3
D5	B2
D6	A3
D7	A3

## AUDIO BOARD

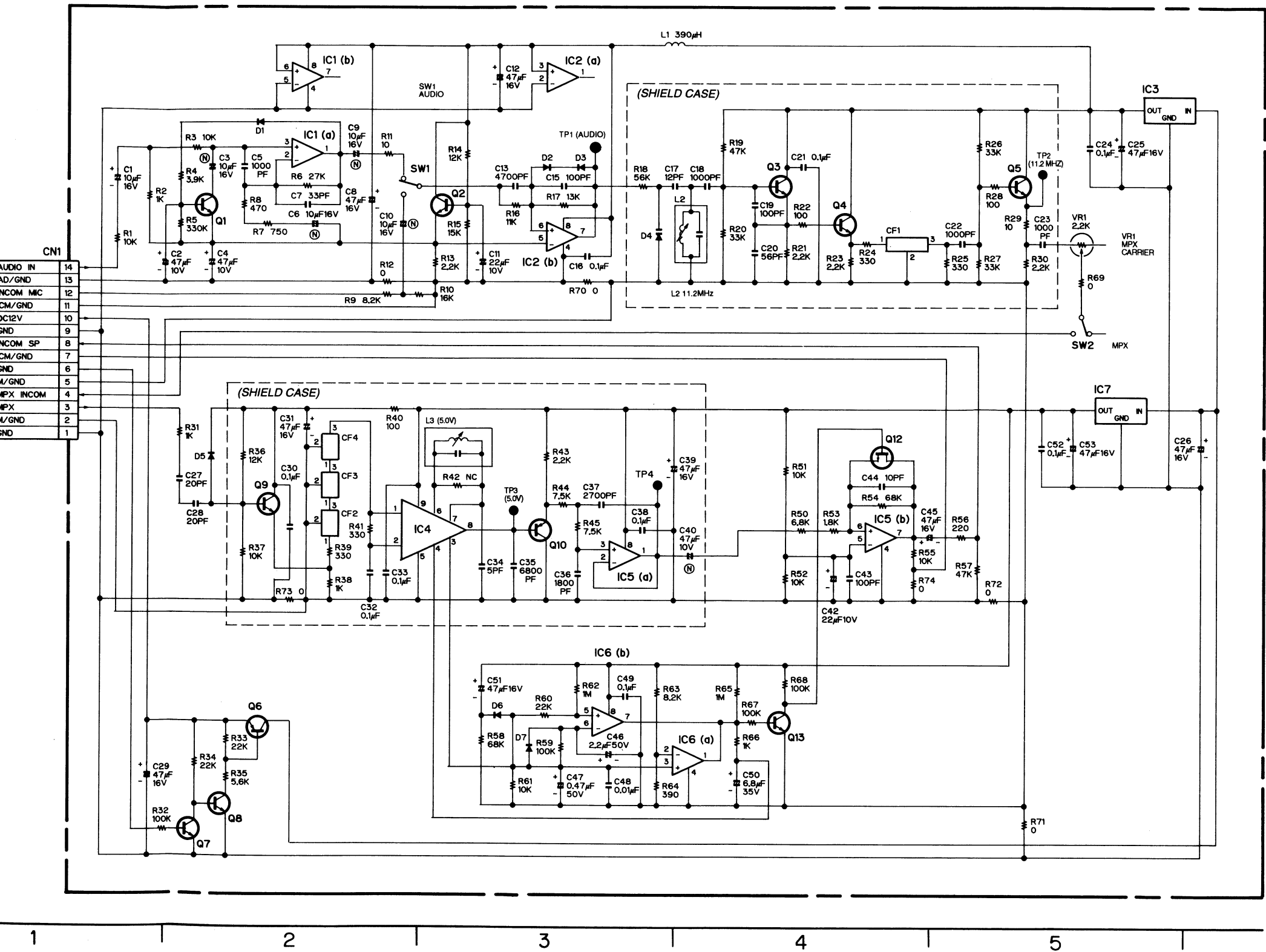
Pin	1	2	3	4	5	6	7
IC1	4.3	8.4	9.1	1.9	5.7	1.4	9.2
IC2	4.3	0	0	1.8	5.7	0.4	0
IC3	4.3	8.9	11.9	1.5	5.7	1.3	11.9
IC4	0	0		1.4	0	0	
IC5	0	4.3		0	4.6	1.5	
IC6	8.9	4.3		3.8	4.6	1.3	
IC7	8.0	4.3		3.8	4.6	1.4	
	8.9	8.9		5.1	9.2	9.0	
				9.2			

	B	C	E
Q1	4.3	4.0	4.4
Q2	5.0	9.1	4.4
Q3	3.3	9.1	2.8
Q4	2.8	9.1	6.0
Q5	4.2	9.1	3.7
Q6	11.0	11.9	12.0
Q7	-	0.7	0
Q8	0.7	0	0
Q9	3.9	8.8	3.2
Q10	5.1	0	5.7
Q11	4.6	0	4.6
Q12	0.6	0	0

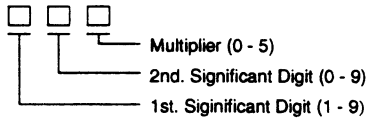


# SCHEMATIC DIAGRAM OF AUDIO/AUDIO MOTHER BOARD (WV-PS550)

## AUDIO BOARD



Note: The value indicated in the schematic diagram should be read as follows:



### <Example>

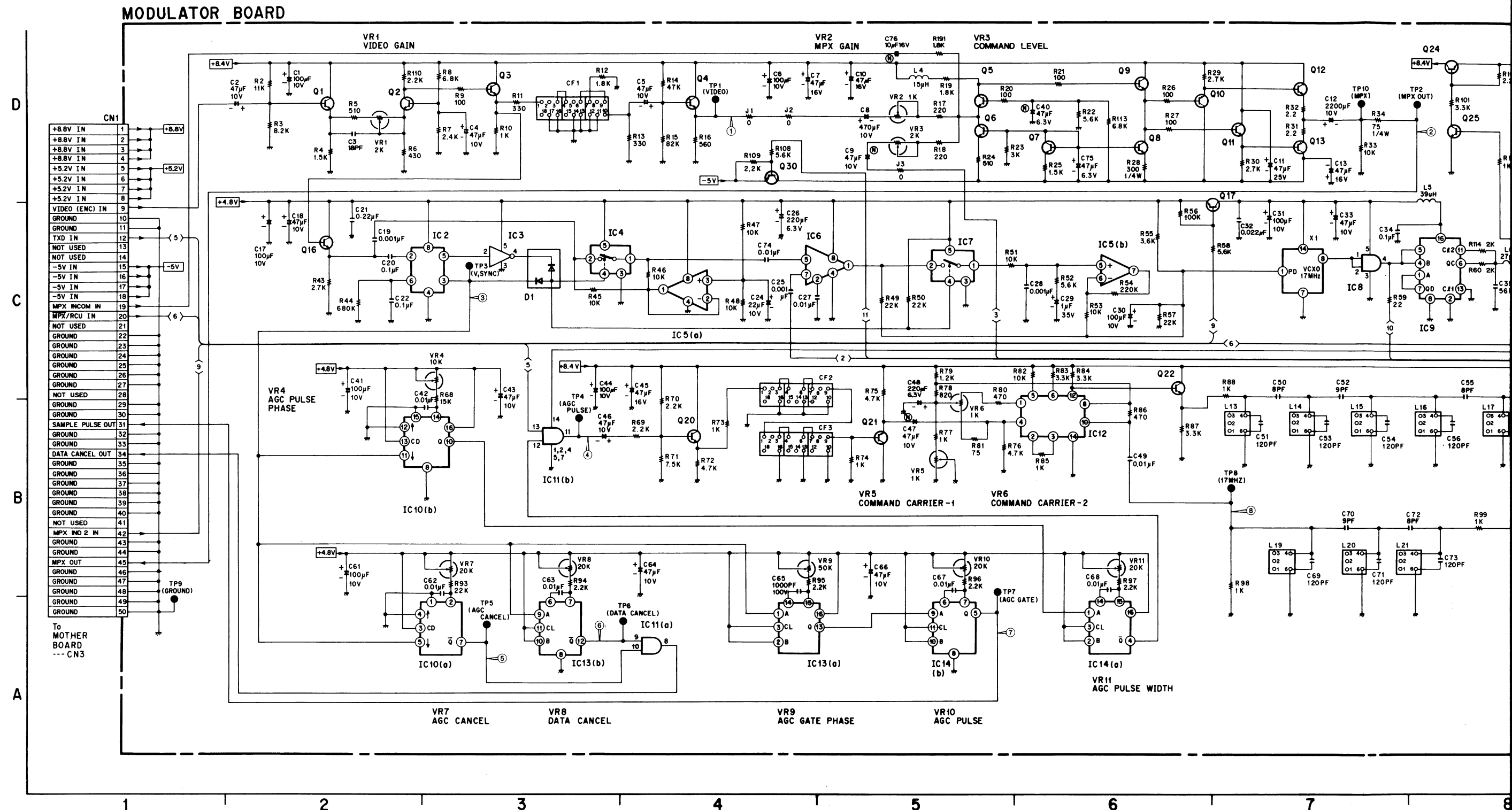
For Resistor:

330  $\rightarrow 33 \times 10^0 = 33 \Omega$   
561  $\rightarrow 56 \times 10^1 = 560 \Omega$   
123  $\rightarrow 12 \times 10^3 = 12k \Omega$   
0R00 = 0  $\Omega$

For Capacitor:

820  $\rightarrow 82 \times 10^0 = 82 pF$   
102  $\rightarrow 10 \times 10^2 = 1000 pF = 0.001 \mu F$   
104  $\rightarrow 10 \times 10^4 = 100000 pF = 0.1 \mu F$   
The suffix attached to capacitance indicates a type of capacitor.

# SCHEMATIC DIAGRAM OF MODULATOR BOARD (WV-PS550)

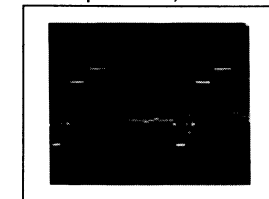


## < Index > MODULATOR BOARD

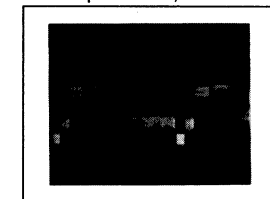
IC1	C9, D9	IC9	C7, C8	Q3	D3	Q11	D7	Q19	C9	Q27	C9
IC2	C2, C3	IC10	A2/B2, A3	Q4	D4	Q12	D7	Q20	B4	Q28	B9
IC3	C3	IC11	B3/A4	Q5	D5	Q13	D7	Q21	B5	Q29	B10
IC4	C3, C4	IC12	B6	Q6	D5	Q14	D8	Q22	C6	Q30	D4
IC5	C4/C6	IC13	A3/A4, A5	Q7	D6	Q15	D8	Q23	C9	D1	C3
IC6	C4, C5	IC14	A5/A6	Q8	D6	Q16	C2	Q24	D8		
IC7	C5	Q1	D2	Q9	D6	Q17	C6, C7	Q25	D8		
IC8	C7	Q2	D2	Q10	D7	Q18	C9	Q26	C9		

## <Waveform>

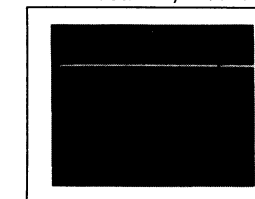
1. 10µsec/DIV, 0.2V/DIV



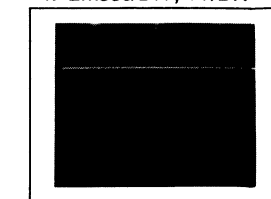
2. 10µsec/DIV, 0.5V/DIV



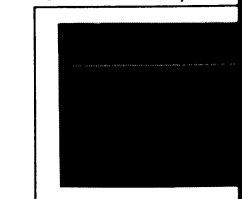
3. 2msec/DIV, 1V/DIV



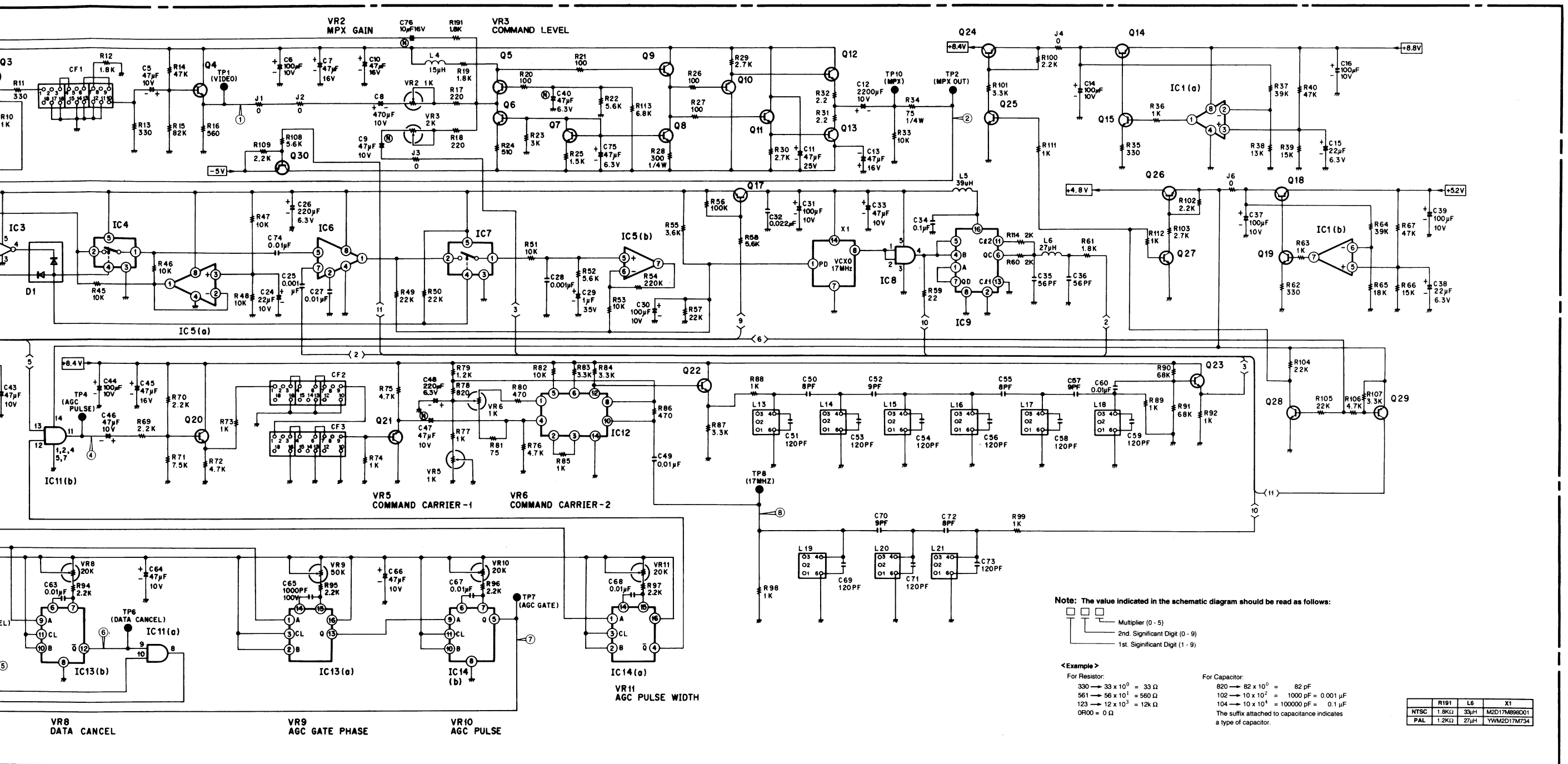
4. 2msec/DIV, 1V/DIV



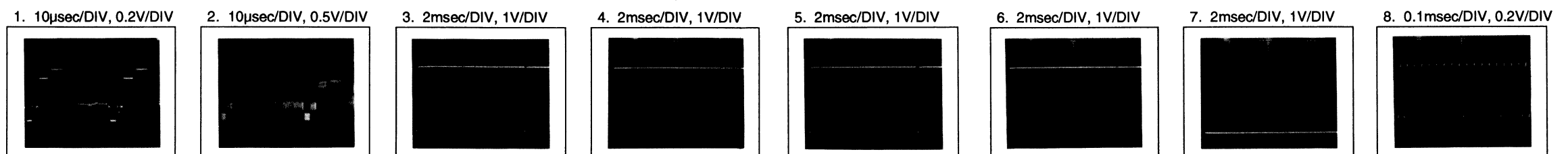
5. 2msec/DIV, 1V/DIV



# SCHEMATIC DIAGRAM OF MODULATOR BOARD (WV-PS550)



## <Waveform>

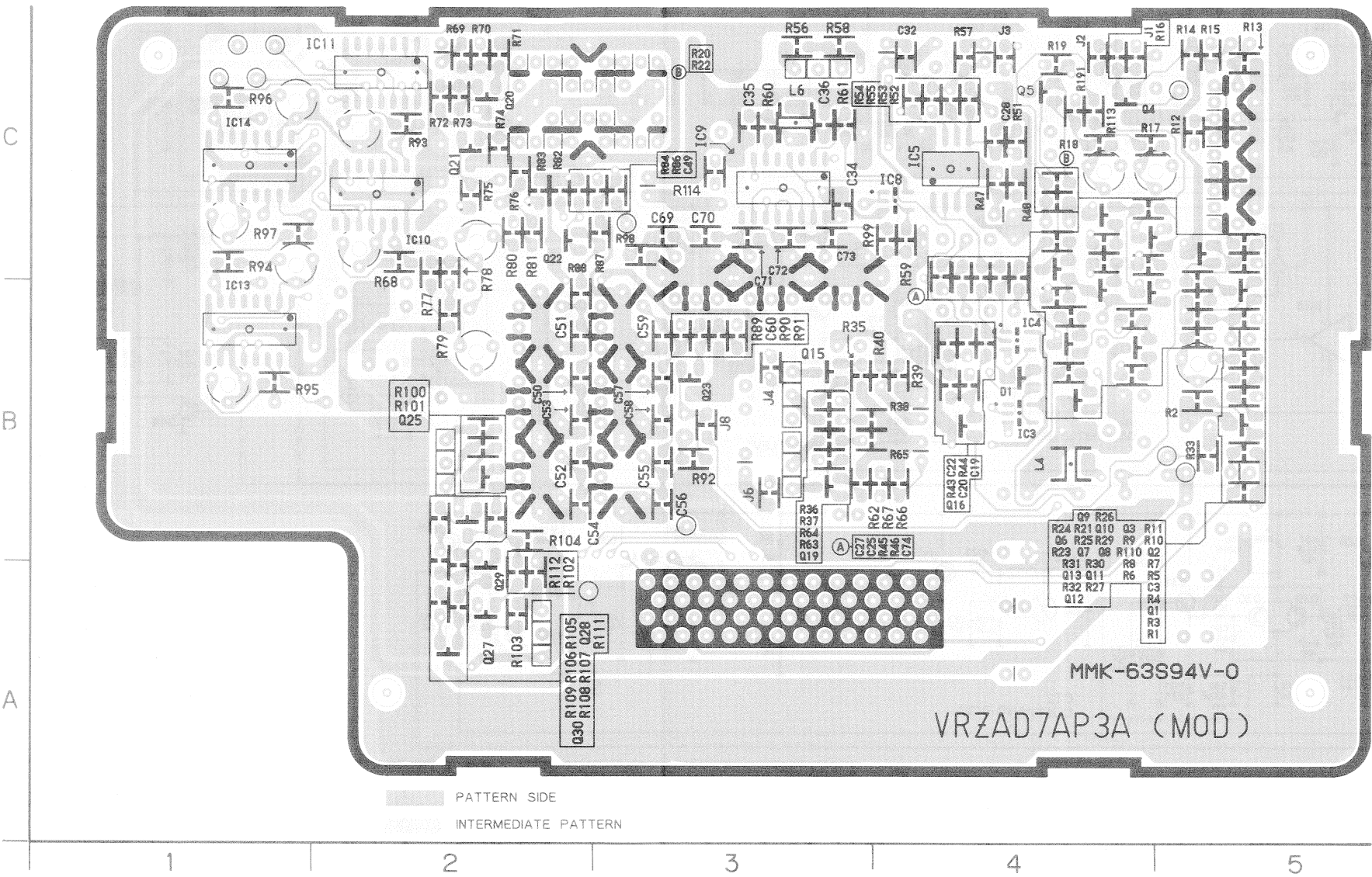




CONDUCTOR VIEW OF MODULATOR BOARD (WV-PS550)

MODULATOR BOARD

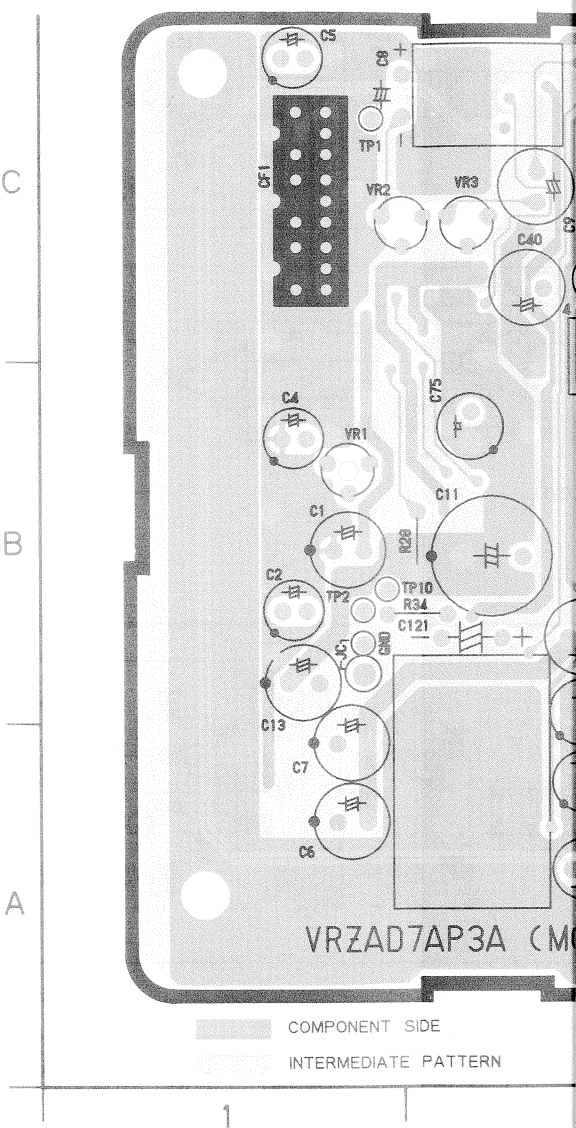
(PATTERN SIDE VIEW)



< Index >  
MODULATOR BOARD  
PATTERN SIDE

IC3	B4	Q10	C4
IC4	B4	Q11	B4
IC5	C4	Q12	B4
IC8	C4	Q13	B4
IC9	C3	Q15	B3
IC10	C2	Q16	B4
IC11	C2	Q19	B2
IC13	B1	Q20	C2
IC14	C1	Q21	C2
Q1	B5	Q22	C2
Q2	B5	Q23	B3
Q3	C3	Q25	B2
Q4	C4	Q27	A2
Q5	C4	Q28	B2
Q6	B4	Q29	A2
Q7	B4	Q30	A2
Q8	B4	D1	B4
Q9	C4		

MODULATOR BOARD

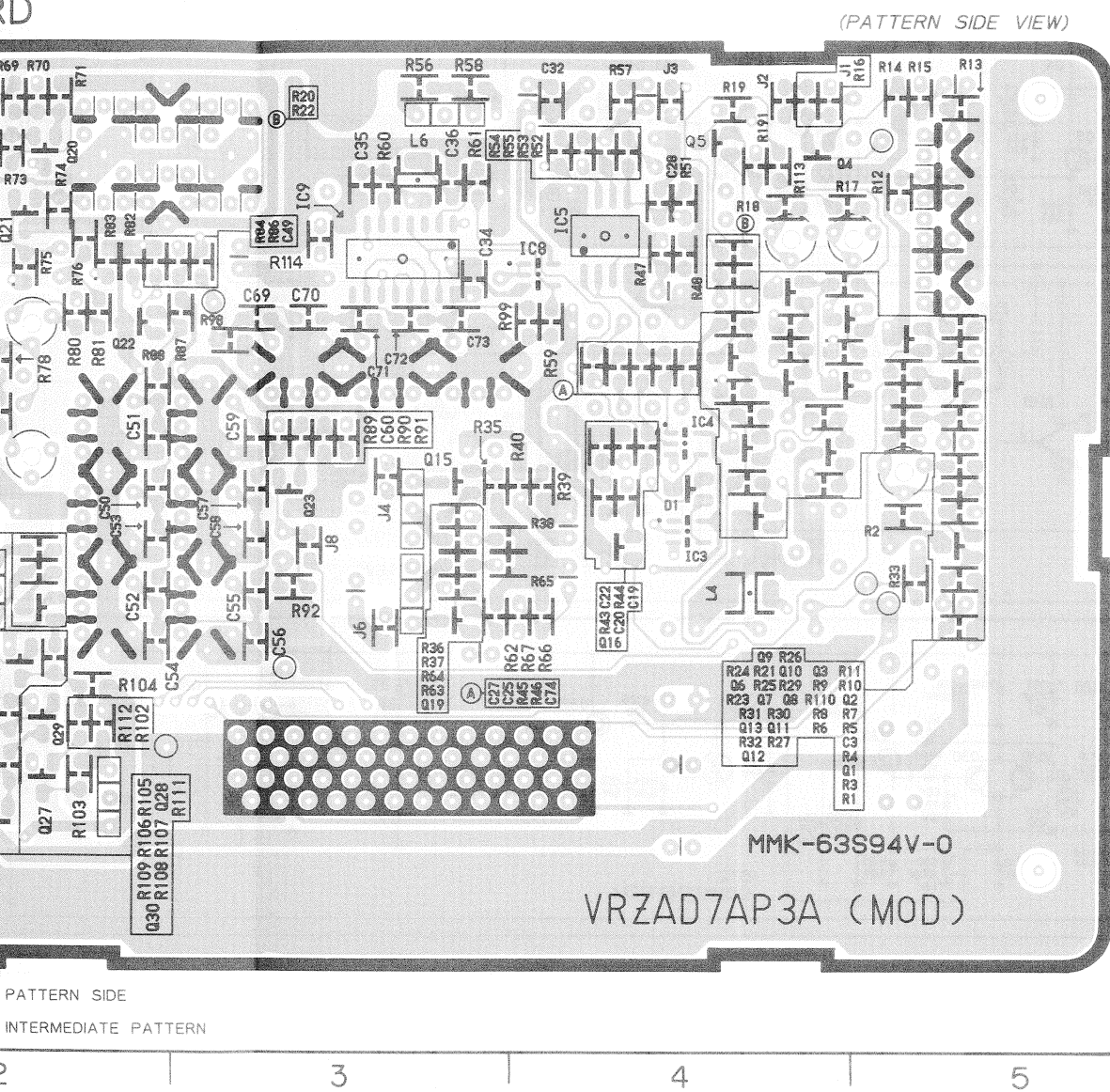


< Index >  
MODULATOR BOARD  
COMPONENT SIDE

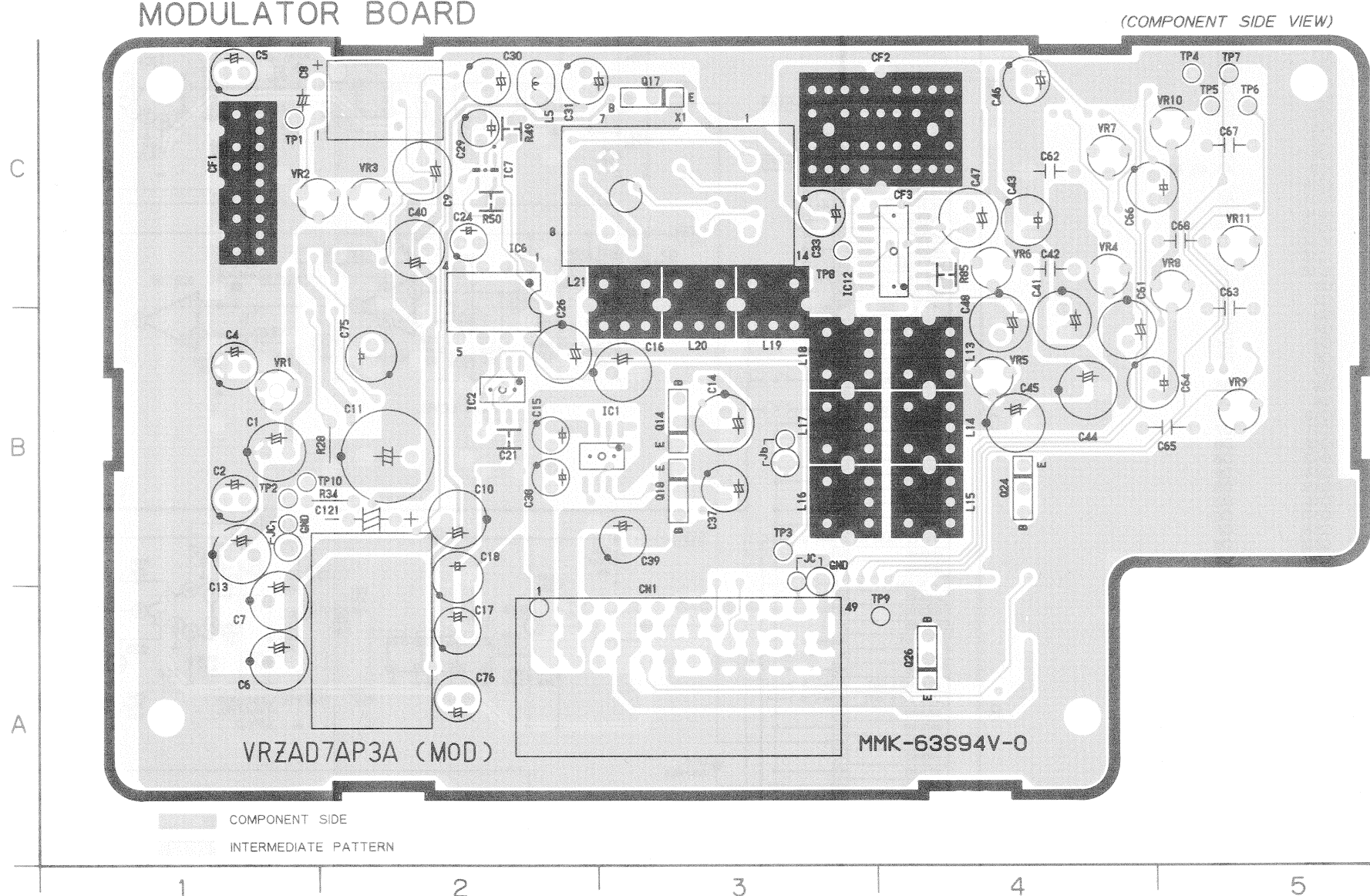
IC1	B2,B3
IC2	B2
IC6	B2,C2
IC7	C2
IC12	C4
Q14	B3
Q17	C3
Q18	B3
Q24	B4
Q26	A4

CONDUCTOR VIEW OF MODULATOR BOARD (WV-PS550)

RD



MODULATOR BOARD



< Index >  
MODULATOR BOARD  
COMPONENT SIDE

IC1	B2,B3
IC2	B2
IC6	B2,C2
IC7	C2
IC12	C4
Q14	B3
Q17	C3
Q18	B3
Q24	B4
Q26	A4

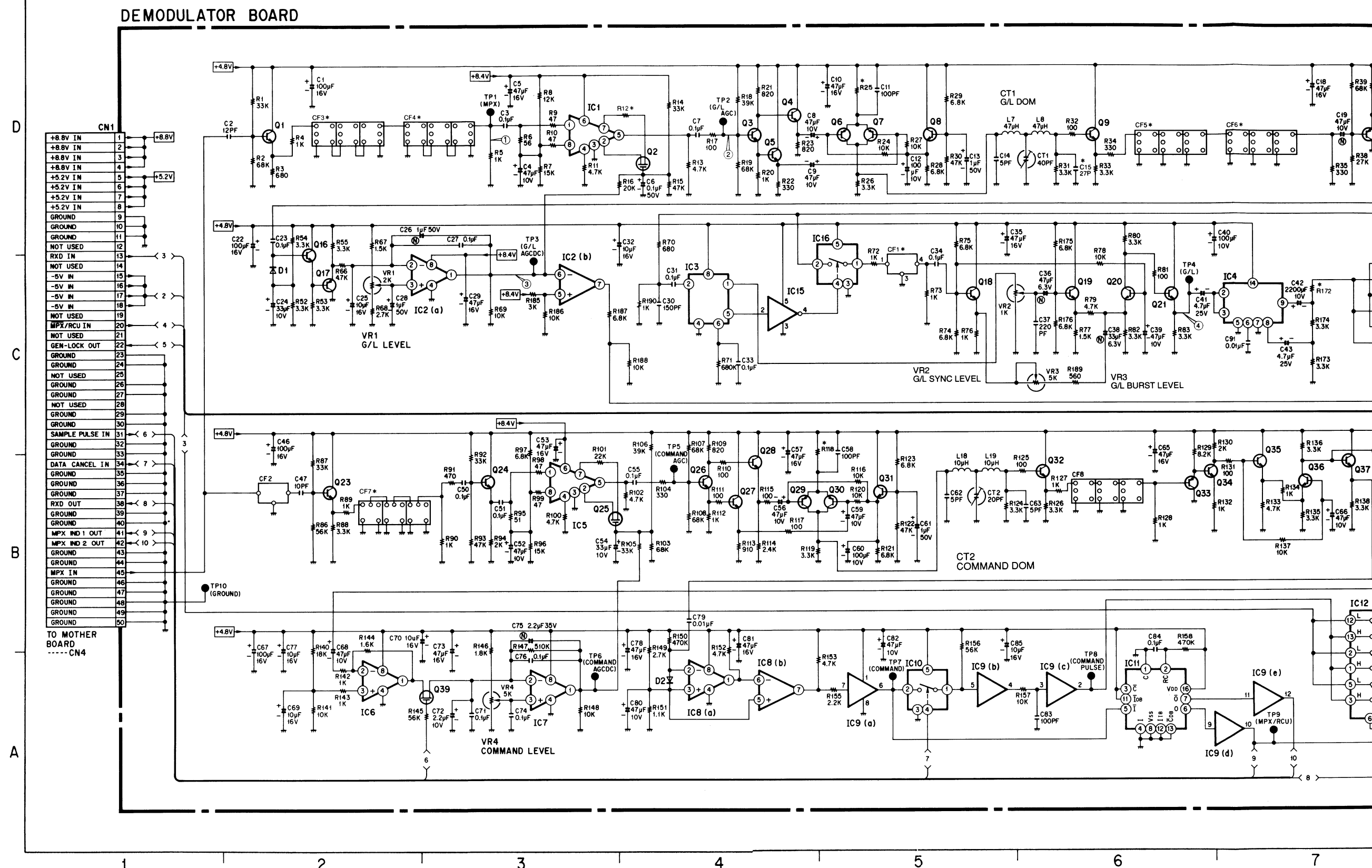


## SCHEMATIC DIAGRAM OF DEMODULATOR BOARD (WV-PS550)

## < Index>

### DEMODULATOR BOARD

IC1	D3
IC2	C3
IC3	C4
IC4	C7
IC5	B3
IC6	A2
IC7	A3
IC8	A4
IC9	A5, A6, A7
IC10	A5
IC11	A6
IC12	B7
IC13	C9, A9
IC14	C7
IC15	C4
IC16	D5
Q1	D2
Q2	D4
Q3	D4
Q4	D4
Q5	D4
Q6	D5
Q7	D5
Q8	D5
Q9	D6
Q10	D7
Q11	D7
Q12	D8
Q13	D8
Q14	D8
Q15	D8
Q16	D2
Q17	C2
Q18	C5
Q19	C6
Q20	C6
Q21	C6
Q23	B2
Q24	B3
Q25	B3
Q26	B4
Q27	B4
Q28	B4
Q29	B4
Q30	B5
Q31	B5
Q32	B6
Q33	B6
Q34	B7
Q35	B7
Q36	B7
Q37	B7
Q38	C7
Q39	A3
Q40	C9
Q41	C9
Q42	Q9
Q43	A9
Q44	C8
Q45	C9
Q46	C9
Q47	A9
Q48	B9
D1	C2
D2	A4

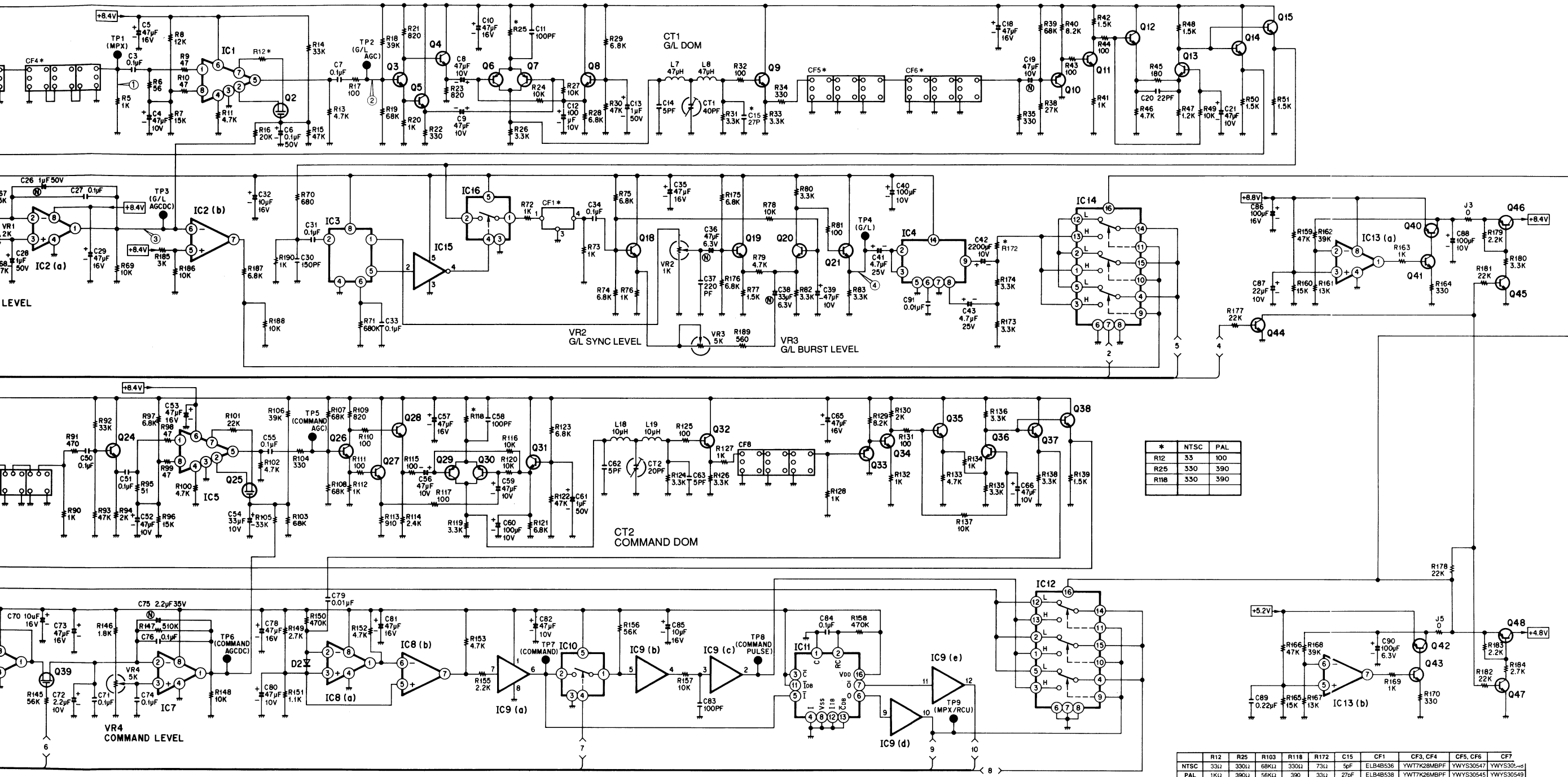


**Note:** The value indicated in the

Multiplier (0 - 5)  
2nd. Significant Digit  
1st. Significant Digit



# SCHEMATIC DIAGRAM OF DEMODULATOR BOARD (WV-PS550)



*	NTSC	PAL
R12	33	100
R25	330	390
R118	330	390

	R12	R25	R103	R118	R172	C15	CF1	CF3, CF4	CF5, CF6	CF7
NTSC	33Ω	330Ω	68kΩ	330Ω	73Ω	5pF	ELB4B536	YW77K28MBPF	YWYS30547	YWYS30549
PAL	1kΩ	390Ω	56kΩ	390	33Ω	27pF	ELB4B538	YW77K28MBPF	YWYS30545	YWYS30549

Note: The value indicated in the schematic diagram should be read as follows:

- Multiplier (0 - 5)
- 2nd. Significant Digit (0 - 9)
- 1st. Significant Digit (1 - 9)

<Example>

For Resistor:

- 330 → 33 × 10<sup>0</sup> = 33 Ω
- 561 → 56 × 10<sup>1</sup> = 560 Ω
- 123 → 12 × 10<sup>3</sup> = 12k Ω
- 0R00 = 0 Ω

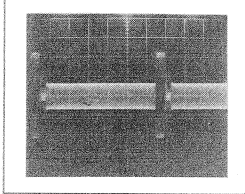
For Capacitor:

- 820 → 82 × 10<sup>0</sup> = 82 pF
- 102 → 10 × 10<sup>2</sup> = 1000 pF = 0.001 μF
- 104 → 10 × 10<sup>4</sup> = 100000 pF = 0.1 μF
- The suffix attached to capacitance indicates a type of capacitor.

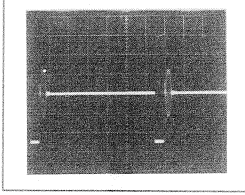
# CONDUCTOR VIEW OF DEMODULATOR BOARD (WV-PS550)

## <Waveform>

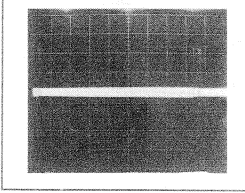
1. 10μsec/DIV, 0.1V/DIV



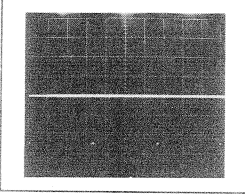
2. 10μsec/DIV, 0.2V/DIV



3. 2msec/DIV, 0.1V/DIV



4. 5msec/DIV, 2V/DIV



## < Voltages >

	IC1	IC2	IC3	IC4	IC5	IC6	IC7	IC8	IC9	IC10	IC11	IC12	IC13	IC14	IC15	IC16
Pin 1	5.0	7.2	0	1.6	3.3	1.8	3.6	0	4.9	4.9	0	4.9	0	0	0	0.7
2	3.9	2.2	1.5	1.2	2.6	1.8	41.8	1.8	4.9	0	4.9	5.1	2.1	0	4.9	3.1
3	0	3.3	0	1.2	0	1.8	3.0	1.4	4.9	0	4.9	4.9	2.1	0	0	0
4	6.2	0	0	2.4	6.3	0	0	0	4.9	4.9	0	5.1	0	0	0	0
5	0	6.7	0.3	0	6.4	1.8	0	1.4	4.9	4.9	4.9	5.1	1.2	0	4.9	4.9
6	0	7.2	1.2	2.4	8.6	0	0	0	4.9	0	0	0	1.2	0		
7	4.6	0	0	0	2.6	4.7	3.6	4.9	4.9		4.9	0	2.1	-5.0		
8	4.6	8.6	4.9	1.3	0	4.9	4.9	4.9	0	0	0	0	8.7	0		
9				1.0					0	4.9	0			0.4		
10				1.7					0	0	0			0		
11				1.					4.9	4.9	0			0		
12				0.1					4.9	0	5.1		0.4			
13				0					0	0	4.9		0			
14				0					0.7	4.9	5.1		0			
15									0	0	5.1		0			
16									0	4.9	5.1		5.1			

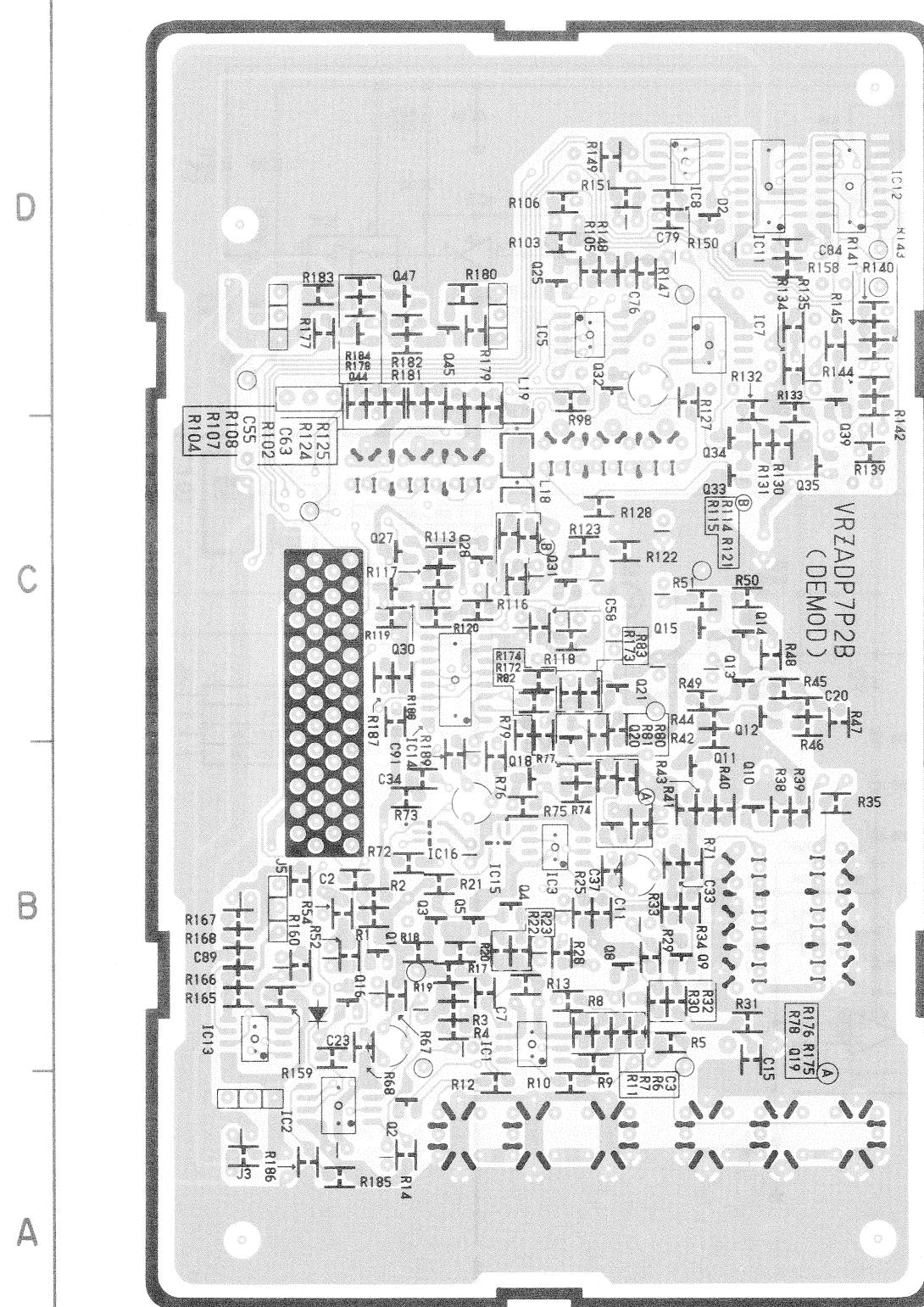
	B	C	E		B	C	E
Q1	2.5	4.9	1.7	23	2.6	4.9	1.9
2	3.9	4.6	0	24	2.7	4.9	1.9
3	2.7	3.3	1.9	25	2.6	3.2	2.6
4	3.3	4.9	2.6	26	2.0	0	1.3
5	1.9	4.9	1.2	27	1.3	4.9	0.6
6	3.8	2.3	4.5	28	3.9	4.9	3.1
7	3.8	2.3	4.5	29	3.6	2.9	0
8	4.3	4.9	3.7	31	4.3	4.9	3.6
9	2.3	4.9	1.7	33	1.1	0	1.8
10	1.5	0	2.1	34	1.8	2.6	1.1
11	2.1	2.8	1.4	35	2.6	4.9	2.0
12	2.8	4.9	2.2	36	2.6	0	1.9
13	2.7	3.7	2.0	37	3.5	4.9	2.9
14	3.7	4.9	3.1	38	3.5	4.9	2.8
15	3.7	4.9	3.1	39	1.8	0	1.8
16	2.1	4.9	1.6	41	0.7	8.1	0.1
17	1.5	0	2.2	44	0	0	0
18	2.4	4.9	1.7	45	0.6	0	0
19	2.4	4.9	1.7	46	8.0	8.6	8.7
20	2.3	3.3	1.6	47	0.6	0	0
21	3.3	4.9	2.0	48	0	4.9	5.0

## < Index >

### DEMOMULATOR BOARD PATTERN SIDE

IC1	B2
IC2	A1
IC3	B2
IC5	D2
IC7	D2,D3
IC8	D2
IC11	D3
IC12	D3
IC13	B1
IC14	C2
IC15	B2
IC16	B2
Q1	B1
Q2	A2
Q3	B2
Q4	B2
Q5	B2
Q8	B2
Q9	B2
Q10	B3
Q11	B2
Q12	C3
Q13	C3
Q14	C3
Q15	C2
Q16	B2
Q18	B2
Q19	B2
Q20	C2
Q21	C2
Q25	D2
Q27	C1,C2
Q28	C2
Q30	C1,C2
Q31	C2
Q32	D2
Q33	C3
Q34	C3
Q35	C3
Q39	D3
Q44	D1
Q45	D2
Q47	D2
D2	D2,D3

## DEMOMULATOR BOARD



## < Index >

### DEMOMULATOR BOARD COMPONENT SIDE

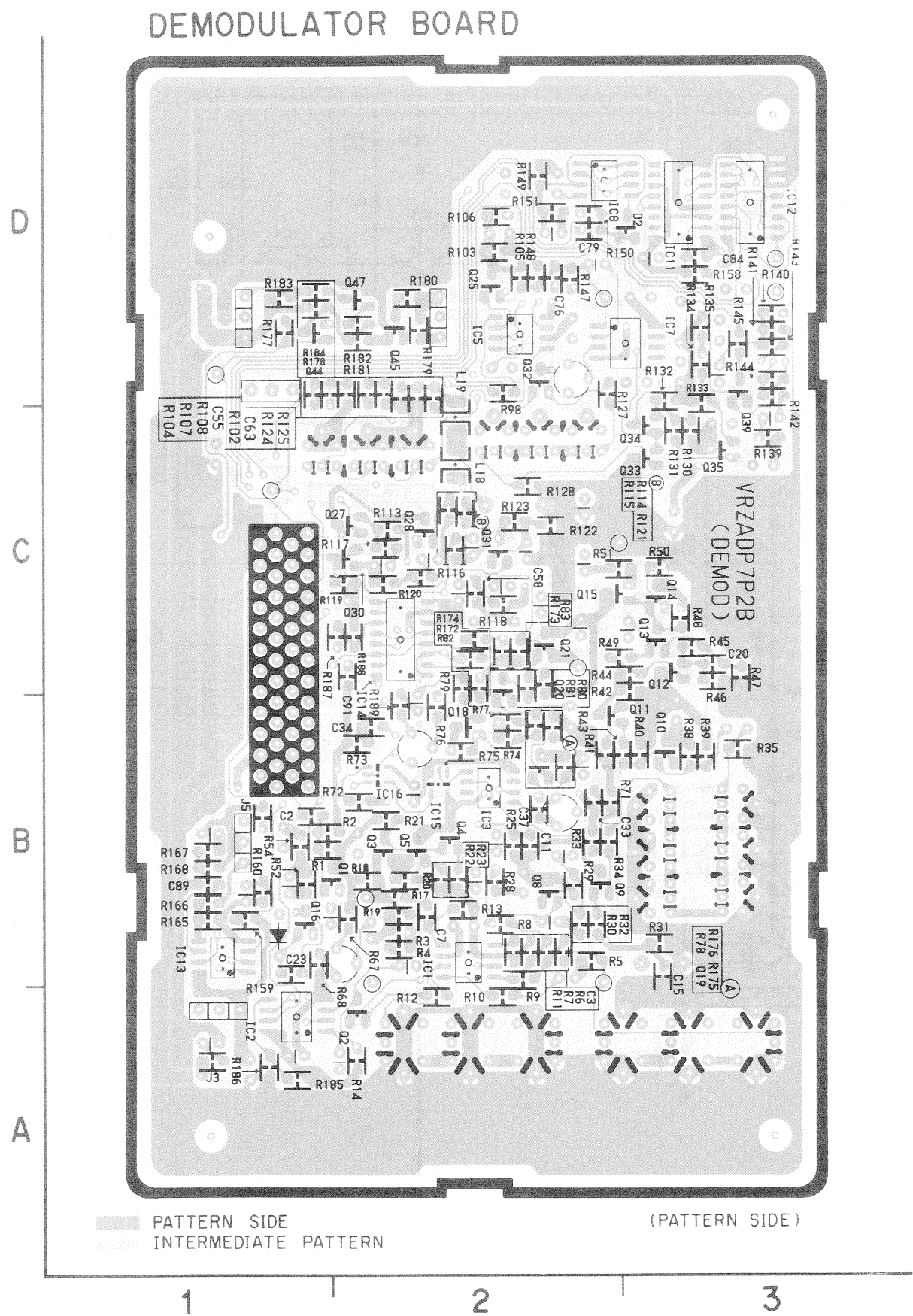
IC4	C2
IC6	D1
IC9	D1
IC10	D1
Q6	B2
Q7	B2
Q17	B2
Q23	D2
Q24	D2
Q26	C2
Q29	C2
Q36	D1
Q37	C1,D1
Q38	C1
Q40	B3
Q41	B3
Q42	B3
Q43	B3
Q46	D2
Q48	D3
D1	B3



CONDUCTOR VIEW OF DEMODULATOR BOARD (WV-PS550)

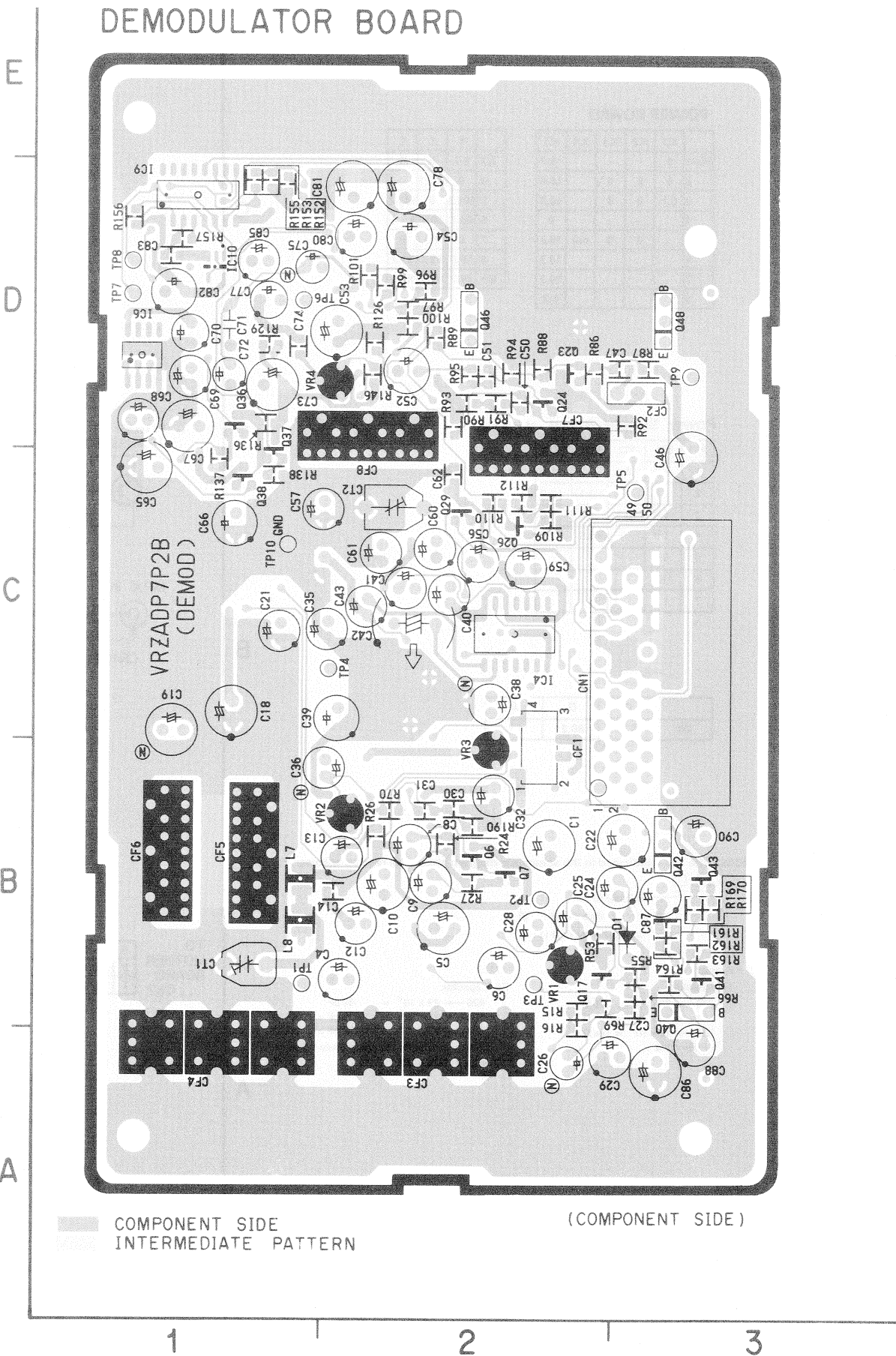
Index>  
DEMOMULATOR BOARD  
PATTERN SIDE

B2  
A1  
B2  
D2  
D2,D3  
D2  
D3  
D3  
B1  
C2  
B2  
B2  
B1  
B2  
B2  
B2  
B2  
B2  
B2  
C3  
C3  
C3  
C2  
B2  
B2  
B2  
C2  
C2  
C2  
C1,C2  
C2  
C2  
C2  
D2  
D2  
D2  
D2  
D2  
D2  
D2,D3



< Index>  
DEMOMULATOR BOARD  
COMPONENT SIDE

IC4  
IC6  
IC9  
IC10  
Q6  
Q7  
Q17  
Q23  
Q24  
Q26  
Q29  
Q36  
Q37  
Q38  
Q40  
Q41  
Q42  
Q43  
Q46  
Q48  
D1  
C2  
D1  
D1  
B2  
B2  
D2  
C2  
C2  
D1  
C1,D1  
B3  
B3  
B3  
B3  
D2  
D3  
B3



# SCHEMATIC DIAGRAM OF POWER BOARD (WV-PS550)

POWER BOARD

Pin	IC1	IC2	IC3	IC4	IC5
1	0	-	-	-	13.7
2	0	0	0	-	10.4
3	0.1	0	0	-	10.3
4	-	-	-	-	0
5	-	0	0	6.0	10.3
6	-	-	-	-	10.3
7	-	-	-	-	10.3
8	-	-	-	-	6.3

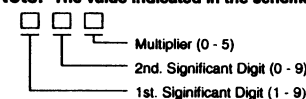
B	C	E
Q3 0.7	0	0
4 0	103.1	0
5 103.2	0	103.2
6 89.2	59.3	89.4
7 0	1.9	0
8 59.3	89.2	89.2
101 89.7	103.4	89.0

Power Supply Board <Voltage>

PIN	IC1	IC2	PC1	PC2
1	7.9	2.4	0.2	11.9
2	1.6	0	-0.1	10.9
3	1.6	10.5	1.6	1.5
4	1.6	-	15.5	7.7
5	6.2	-	-	-
6	15.6	-	-	-
7	1.6	-	-	-

	G	D	S
Q1	6.2	88.2	1.7

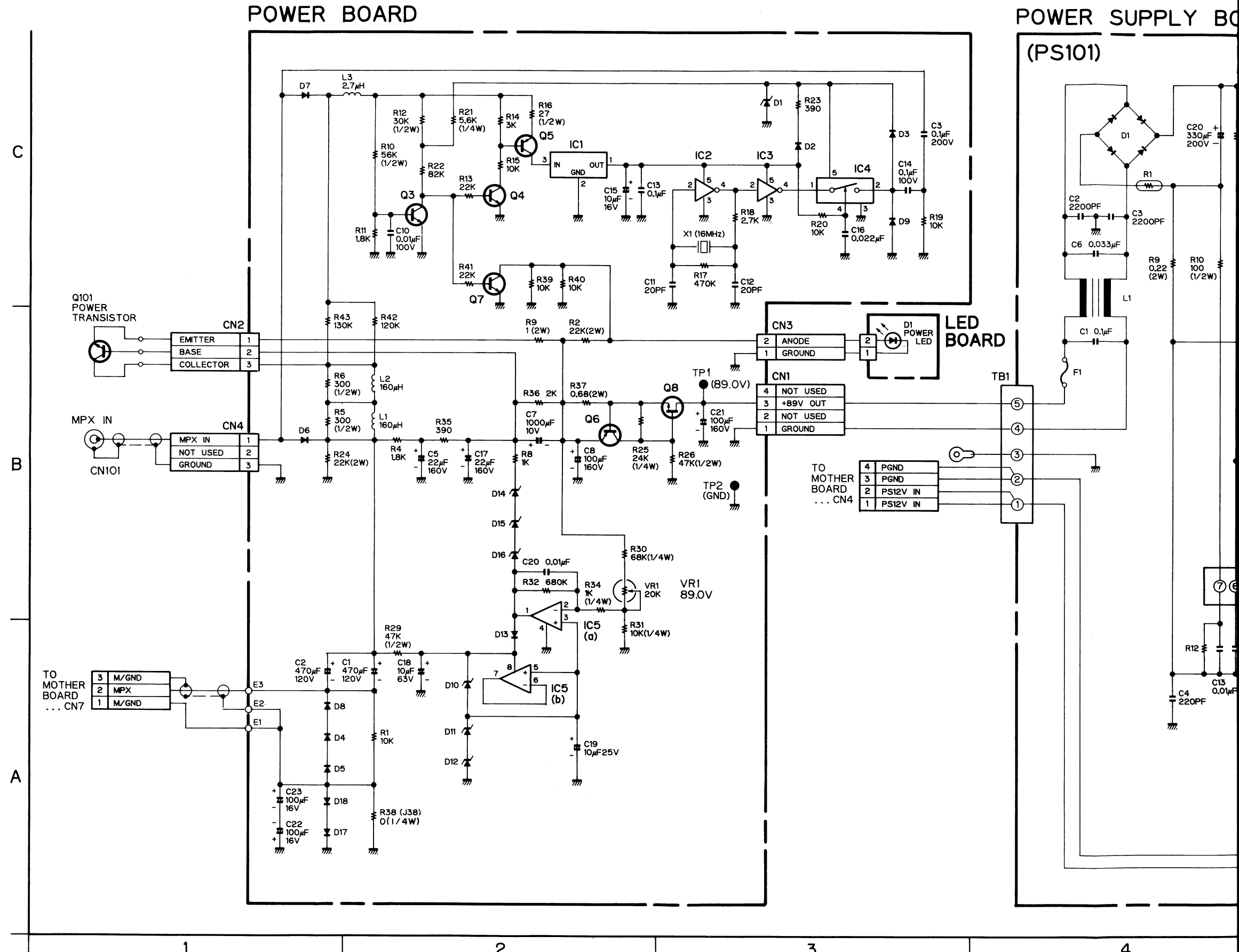
Note: The value indicated in the schematic diagram should be read as follows:



## <Example>

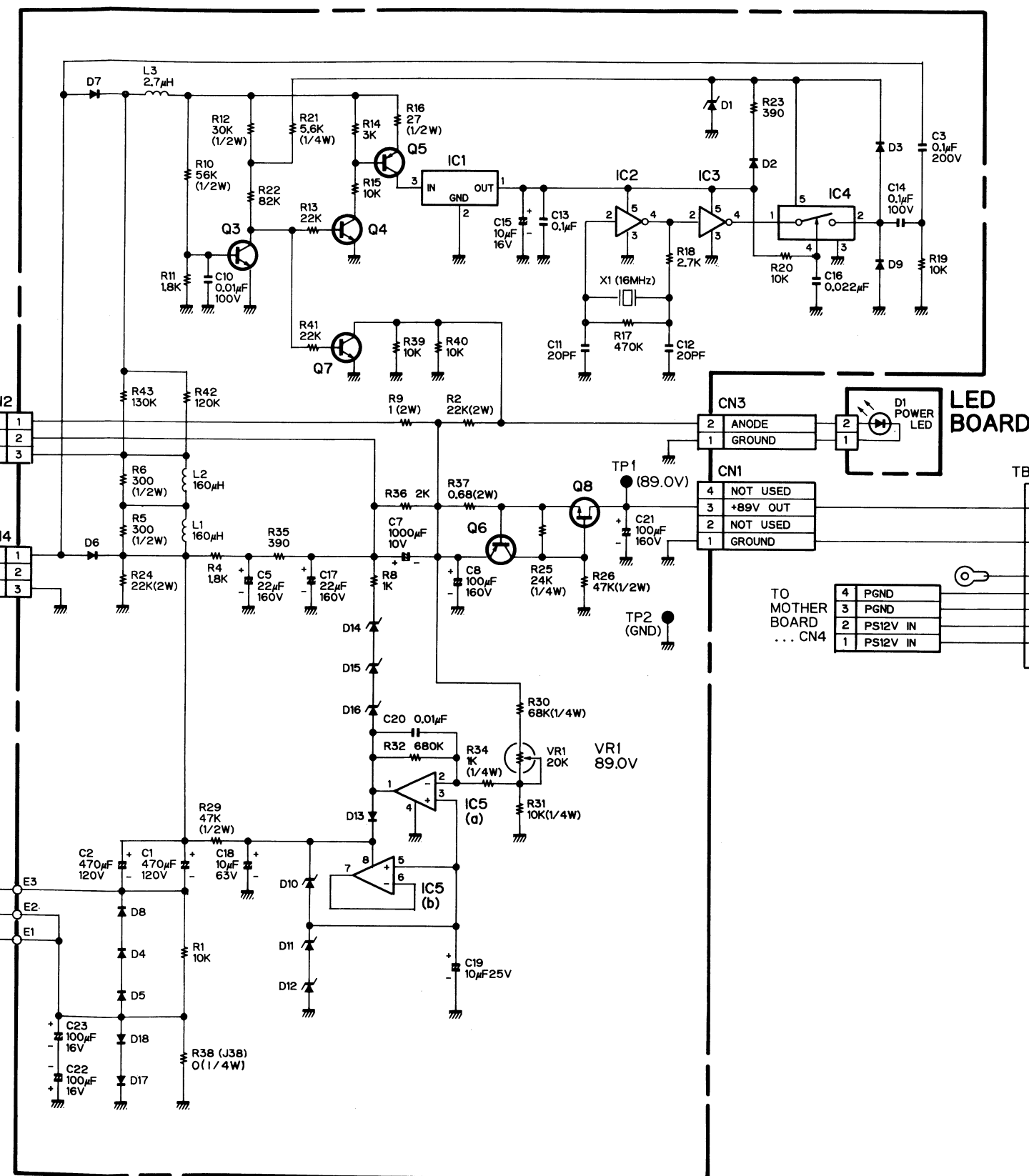
For Resistor:  
330  $\rightarrow 33 \times 10^0 = 33 \Omega$   
561  $\rightarrow 56 \times 10^1 = 560 \Omega$   
123  $\rightarrow 12 \times 10^3 = 12k \Omega$   
0R00 = 0  $\Omega$

For Capacitor:  
820  $\rightarrow 82 \times 10^0 = 82 pF$   
102  $\rightarrow 10 \times 10^2 = 1000 pF = 0.001 \mu F$   
104  $\rightarrow 10 \times 10^4 = 100000 pF = 0.1 \mu F$   
The suffix attached to capacitance indicates a type of capacitor.

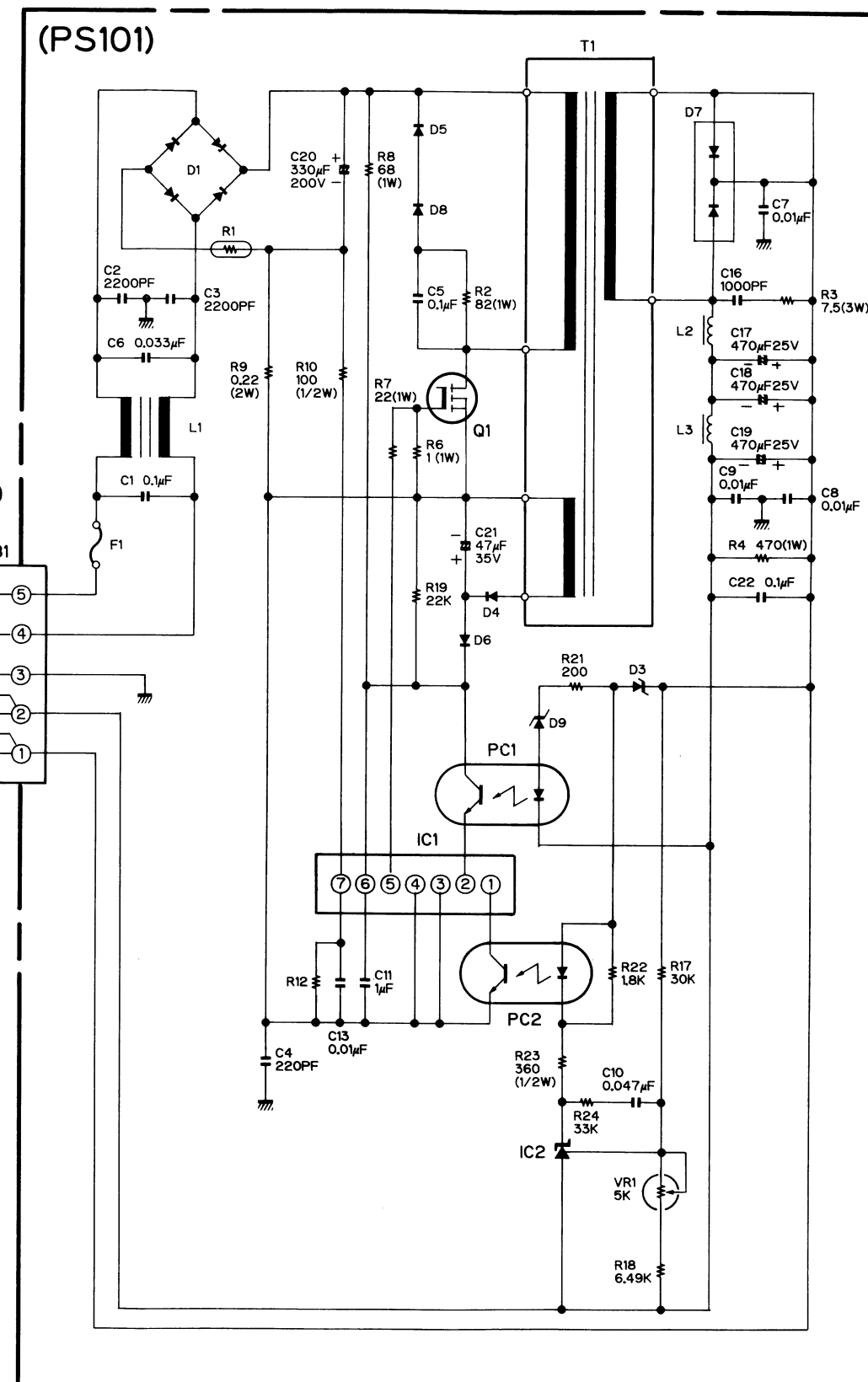


# SCHEMATIC DIAGRAM OF POWER BOARD (WV-PS550)

## POWER BOARD



## POWER SUPPLY BOARD



### < Index > POWER BOARD

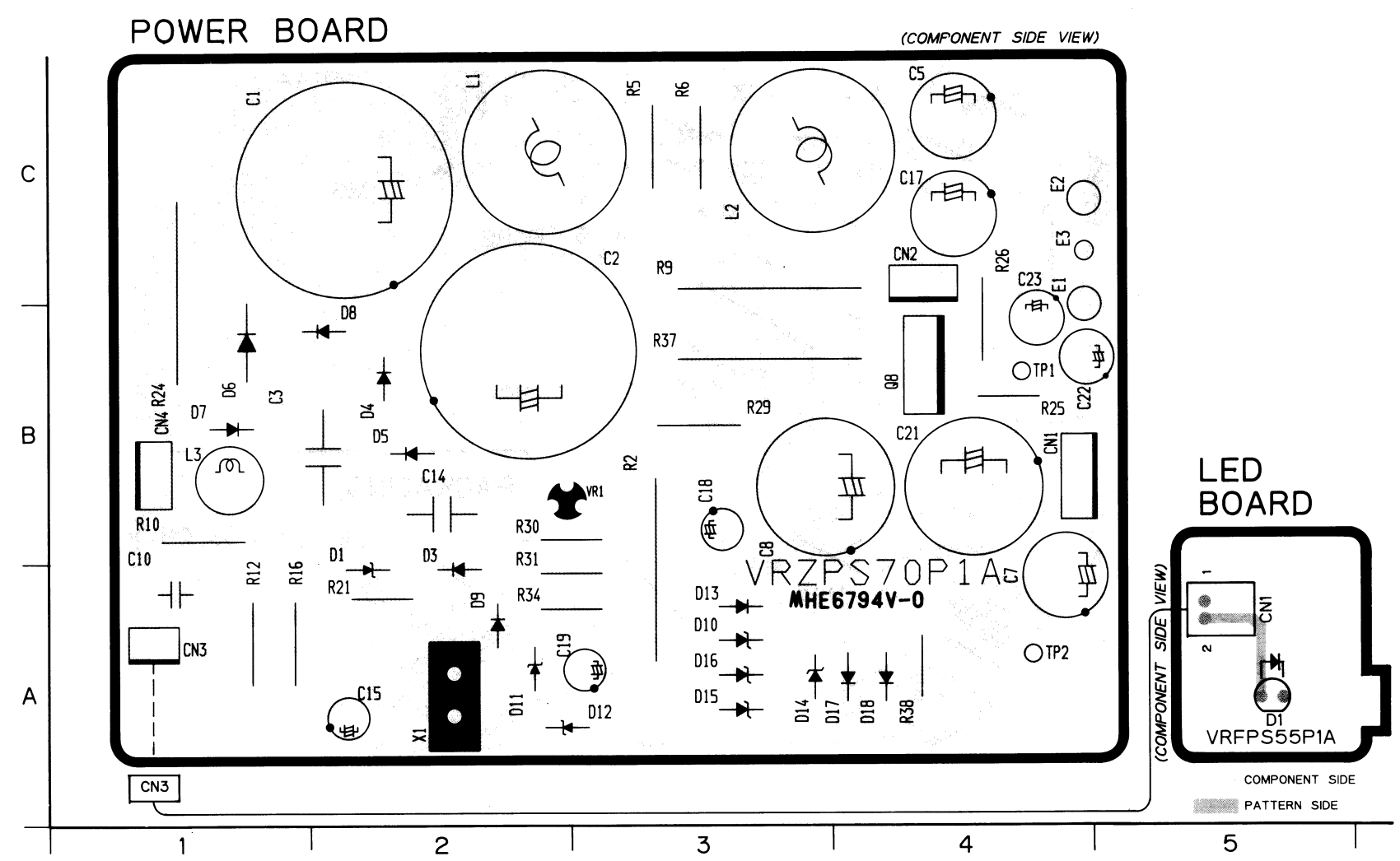
IC1	C2
IC2	C3
IC3	C3
IC4	C3
IC5	A2, B2
Q3	C2
Q4	C2
Q5	C2
Q6	B2
Q7	C2
Q8	B3
Q101	B1
D1	C3
D2	C3
D3	C3
D4	A1
D5	A1
D6	B1
D7	C1
D8	A8
D9	C3
D10	A2
D11	A12
D12	A2
D13	A2
D14	B2
D15	B2
D16	B2
D17	A1
D18	A1
D101	B3

### < Index > POWER SUPPLY BOARD

IC1	B4, B5
IC2	A5
Q1	C5
D1	C4
D3	B5
D4	B5
D5	C5
D6	B5
D7	C5
D8	C5
D9	B5
PC1	B5
PC2	A5

### < Index > LED BOARD

D1	B3
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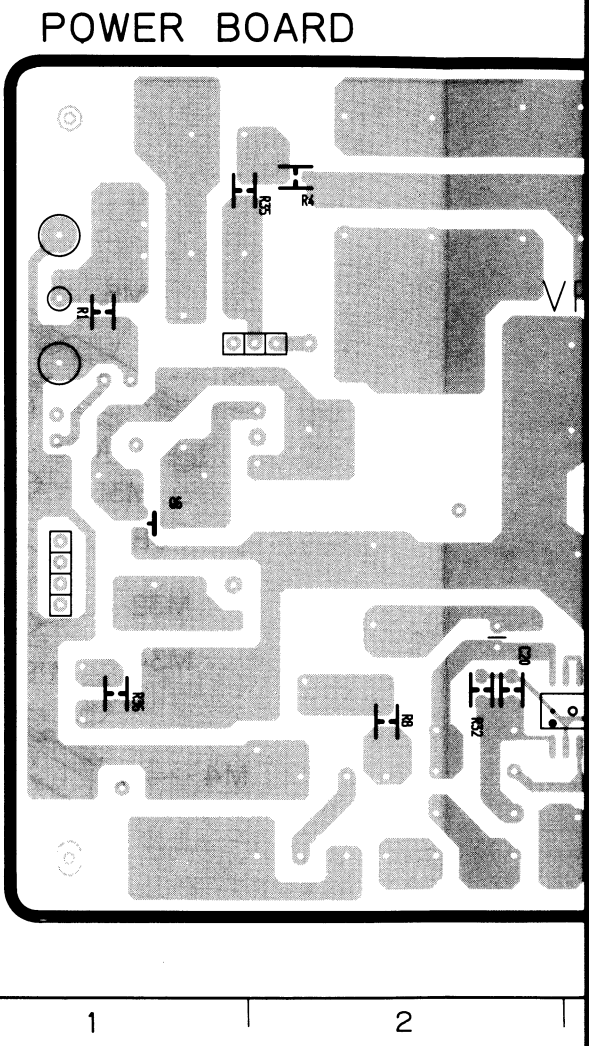


< Index >  
POWER BOARD  
COMPONENT SIDE

Q8	B4
D1	A2
D3	A2
D4	B2
D5	B2
D6	B1
D7	B1
D8	B2
D9	A2
D10	A3
D11	A2
D12	A2, A3
D13	A3
D14	A3
D15	A3
D16	A3
D17	A4
D18	A4

< Index >  
LED BOARD

D1	A5
----	----



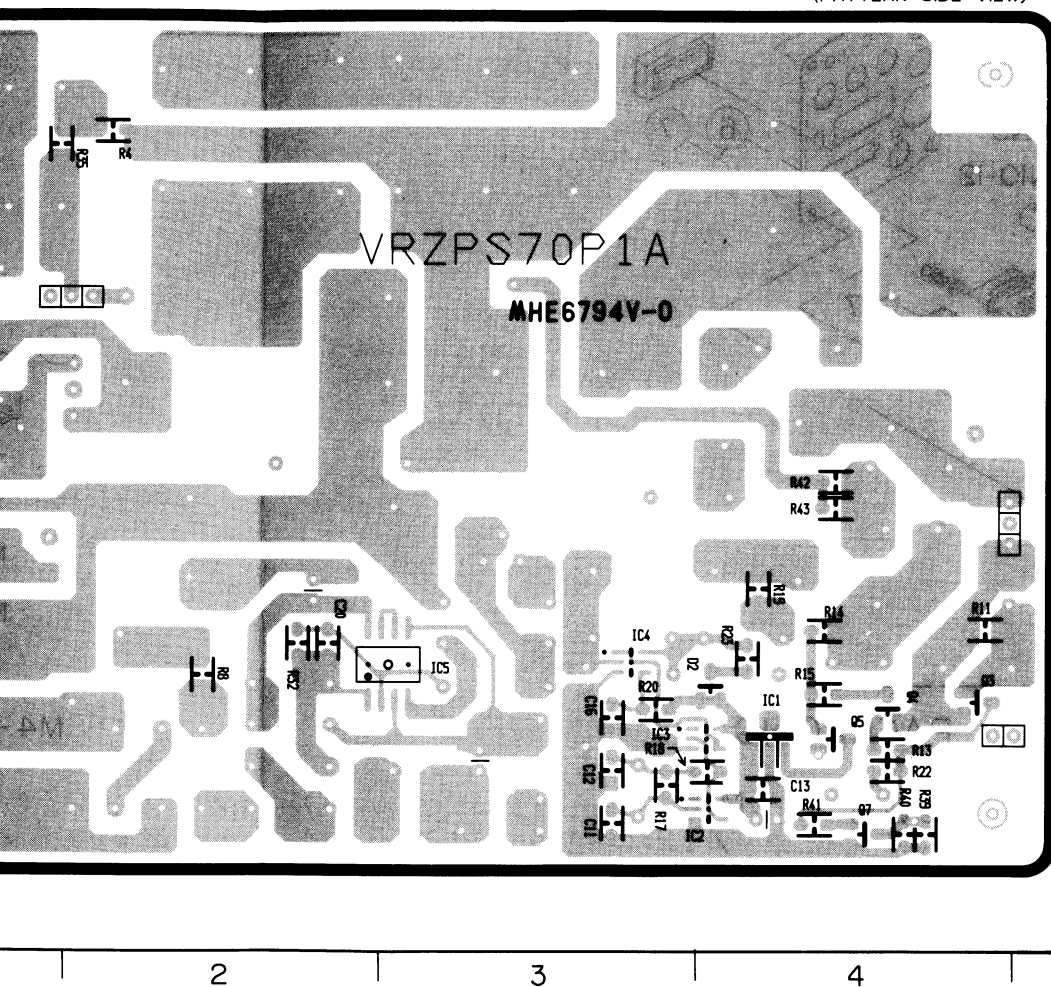
< Index >  
POWER BOARD  
PATTERN SIDE

IC1	A4
IC2	A4
IC3	A4
IC4	A3
IC5	A2, A3
Q3	A4
Q4	A4
Q5	A4
Q7	A4
D2	A4



BOARD

(PATTERN SIDE VIEW)



## WARD DE

**A3**

- 110 -

**WARNING REPLACE ONLY SAME TYPE FUSE**

(COMPONENT SIDE VIEW)

**< Index >**  
**POWER SUPPLY BOARD**  
**COMPONENT SIDE**

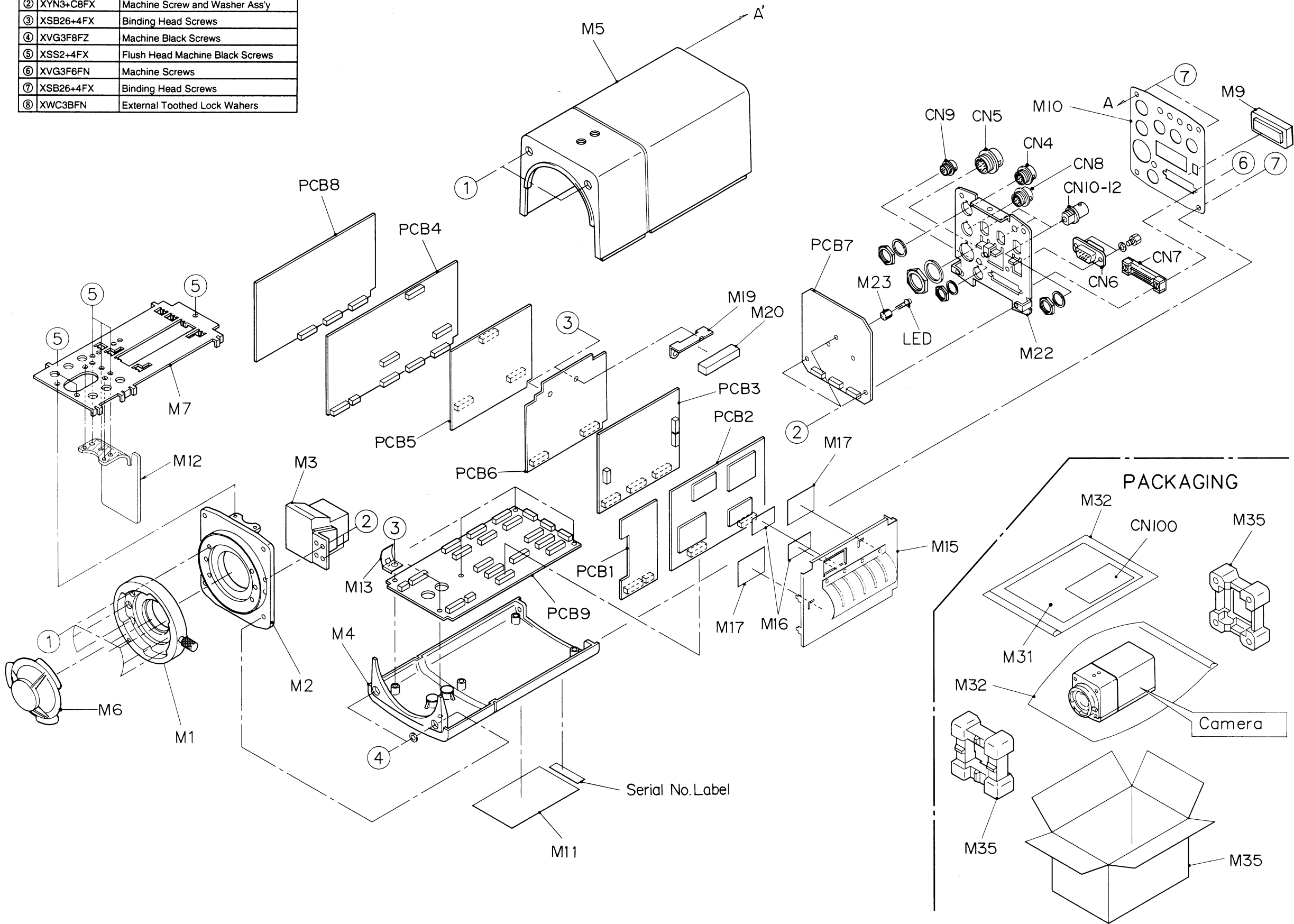
IC1	B1, B2, C1, C2
Q1	C3
D1	B2, B3
D3	B1
D4	C2
D5	C2
D6	C2
D7	D1
D8	C2
D9	C1
PC1	B1
PC2	B1



EXPLODED VIEW (WV-E550E)

○ Numbers shows screws, washers, nuts and etc.

Screws	Description
① XSN3+6FN	Binding Head Screws
② XYN3+C8FX	Machine Screw and Washer Ass'y
③ XSB26+4FX	Binding Head Screws
④ XVG3F8FZ	Machine Black Screws
⑤ XSS2+4FX	Flush Head Machine Black Screws
⑥ XVG3F6FN	Machine Screws
⑦ XSB26+4FX	Binding Head Screws
⑧ XWC3BFN	External Toothed Lock Wahers



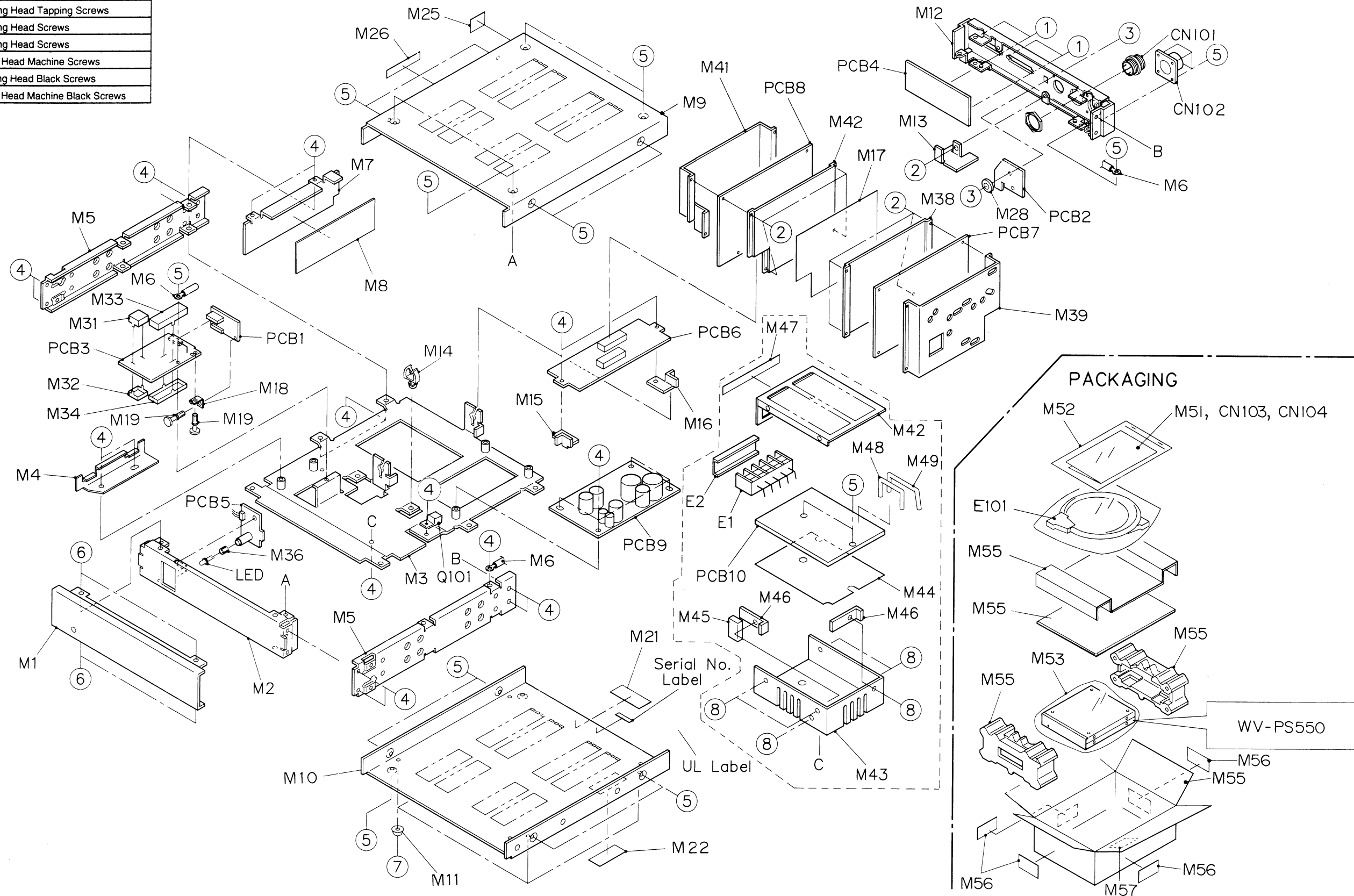
○ Numbers shows screws, washers, nuts and etc.

Screws	Description
① XSB25+6FN	Binding Head Screws
② XSB26+4FX	Binding Head Screws
③ XTB3+6BFN	Binding Head Screws
④ XSB3+6FX	Binding Head Screws
⑤ XSB3+6FN	Binding Head Screws
⑥ XSS26+6FN	Flush Head Machine Black Screws
⑦ XSB3+12FXK	Binding Head Screws
⑧ XSS3+6FXK	Flush Head Machine Black Screws

# EXPLODED VIEW (WV-PS550)

○ Numbers shows screws, washers, nuts and etc.

Screws	Description
① XSB25+6FN	Binding Head Screws
② XSB26+4FX	Binding Head Screws
③ XTB3+6BFN	Binding Head Tapping Screws
④ XSB3+6FX	Binding Head Screws
⑤ XSB3+6FN	Binding Head Screws
⑥ XSS26+6FN	Flush Head Machine Screws
⑦ XSB3+12FXK	Binding Head Black Screws
⑧ XSS3+6FXK	Flush Head Machine Black Screws



# REPLACEMENT PARTS LIST

## Important Notice

- Components identified by "△" mark have special characteristics important for safety.  
When replacing any of these components, use only manufacturer's specified parts.
- RTL : Retention Time Limited.

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
<b>COLOUR VIDEO CAMERA WV-E550E</b>			<b>DRIVE BOARD</b>		
<b>MISCELLANEOUS</b>			PCB1 (RTL)	YWVKB550E1A	Printed Circuit Board Assy
M1	YWV0EA0284AN	Bayonet Mont Assy	IC3	MN5197	IC
M2	YWV2KA0862B2	Optical Chassis	IC7	YWTC7W04FUL	IC
M3	YWV0EA0307AN	Optical Head Assy	IC8	YWTC7508F	IC
M4	YWV5KA1330B1	Bottom Case	IC9	YWCXD1265R	IC
M5	YWV5KA1329A1	Upper Case	IC11	TC74HC4050AF	IC
M6	CAP410A	Body Cap	IC12	UPD74HC4049G	IC
M7	YWV2CA0385B2	Hold Plate	IC15	TC74HC4050AF	IC
M9	YWPCSE28CU	Connector Cap	IC16	YWTC7586F	IC
M10	YWV6GA0259A3	Rear Panel	IC17	YWTC7532F	IC
M11 △	YWV7QA3240A4	Main Label	IC18	YWTC7W74F	IC
M12	YWV7DA0387A3	Heat sink	IC19	YWTC7WU04F	IC
M13	YWV4JA0483A4	Spring Plate	Q1	2SK662-PQR	FET
M20	YWV2FA0657A4	Rubber Cushion for Heat Sink	Q2-4	2SB1218A-QR	Transistor
			Q5	2SC4176	Transistor
			Q6	2SA1610	Transistor
			Q7-9	2SD1819-QRS	Transistor
			D1,2	MA372	Diode
			D3	MA121	Diode
			D4,5	MA143	Diode
			D6	MA121	Diode
			D7,8	MA141K	Diode
			R1	ERJ3GEY0R00	Carbon 0 ohms 1/16W
			R2	ERJ3GEYJ102	Carbon 1K ohms 1/16W
			R3	ERJ3GEYJ752	Carbon 7.5Kohms 1/16W
			R4	ERJ3GEYJ302	Carbon 3K ohms 1/16W
			R5,6	ERJ3GEYJ103	Carbon 10K ohms 1/16W
			R8	ERJ3GEYJ101	Carbon 100 ohms 1/16W
			R26,52	ERJ3GEY0R00	Carbon 0 ohms 1/16W
			R65	ERJ3GEYJ100	Carbon 10 ohms 1/16W
			R69	ERJ3GEY0R00	Carbon 0 ohms 1/16W
			R71	ERJ3GEYJ105	Carbon 1M ohms 1/16W
			R75	ERJ3GEY0R00	Carbon 0 ohms 1/16W
			R81-83	ERJ3GEYJ470	Carbon 47 ohms 1/16W
			R84	ERJ3GEY0R00	Carbon 0 ohms 1/16W
			R87-89	ERJ3GEYJ470	Carbon 47 ohms 1/16W
			R92-94	ERJ3GEYJ470	Carbon 47 ohms 1/16W
			R95-97	ERJ3GEYJ103	Carbon 10K ohms 1/16W
			R98-100	ERJ3GEYJ104	Carbon 100K ohms 1/16W
			R101	ERJ3GEYJ100	Carbon 10 ohms 1/16W
			R105	ERJ3GEY0R00	Carbon 0 ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R106	YWR0816R393D	Metal	39K ohms 1/16W	DIGITAL PROCESS BOARD			
R107-109	ERJ3GEYJ104	Carbon	100K ohms 1/16W	PCB2 (RTL)	YWVKCE550E1A	Printed Circuit Board Assy	
R133,143	ERJ3GEYJ470	Carbon	47 ohms 1/16W	IC1	YWVC5776	LSI	
R150,151	ERJ3GEYJ470	Carbon	47 ohms 1/16W	IC2	YWVC5727	LSI	
R152,153	ERJ3GEY0R00	Carbon	0 ohms 1/16W	IC3	YWVC5777A	LSI	
R154	YWR0816P102D	Metal	1K ohms 1/16W	IC4	YWVC5778	LSI	
R155	YWR0816P103D	Metal	10K ohms 1/16W	IC5	NJM2904M	IC	
R156	YWR0816P271D	Metal	270 ohms 1/16W	IC6-8	YWCXD1175AM	IC	
R157	YWR0816P331D	Metal	330 ohms 1/16W	IC9	YWTC74AC04AF	IC	
R158	ERJ3GEY0R00	Carbon	0 ohms 1/16W	IC10	YWH74AC164F	IC	
R159	YWR0816P201D	Metal	200 ohms 1/16W	IC11	YWTC74AC00F	IC	
R160	ERJ3GEY0R00	Carbon	0 ohms 1/16W	IC12	YWTC74AC08F	IC	
R162	ERJ3GEYJ102	Carbon	1K ohms 1/16W	IC14	YWTC7532F	IC	
R163	ERJ3GEYJ151	Carbon	150 ohms 1/16W	IC15	YWTC74AC74F	IC	
R164	ERJ3GEYJ103	Carbon	10K ohms 1/16W	IC16	YWTC74AC08F	IC	
R165	ERJ3GEYJ331	Carbon	330 ohms 1/16W	IC17-20	YWMN6557AS	IC	
R166	ERJ3GEYJ105	Carbon	1M ohms 1/16W	IC21	YWTC4S66FR	IC	
VR1-3	EVM7JGA30B15	Variable Resistor	100K ohms	IC22	YWTC7508F	IC	
VR4-6	EVM7J5W30B25	Variable Resistor	200K ohms	Q1	2SB956-RS	Transistor	
C1	SK21C225KRA	Electrolytic	2.2 $\mu$ F 16V	Q2	2SD1819-QRS	Transistor	
C2	YW5F104Z2VB	Ceramic	0.1 $\mu$ F	Q3	2SB1073-QR	Transistor	
C3	YW5CH221J5VB	Ceramic	220 pF	Q4	2SD1819-QRS	Transistor	
C4	YW5F104Z2VB	Ceramic	0.1 $\mu$ F	R1,2	YWR0816P103D	Metal	10K ohms 1/16W
C5	YW5CH221J5VB	Ceramic	220 pF	R3	YWR0816P163D	Metal	16K ohms 1/16W
C8,10	SK21A476KRD0	Electrolytic	47 $\mu$ F 10V	R4	ERJ3GEYJ102	Carbon	1K ohms 1/16W
C13-15	YW5F104Z2VB	Ceramic	0.1 $\mu$ F	R5	ERJ3GEYJ330	Carbon	33 ohms 1/16W
C16-18	ECEV1CV100	Electrolytic	10 $\mu$ F 16V	R6	YWR0816P153D	Metal	15K ohms 1/16W
C19-21	YW5F104Z2VB	Ceramic	0.1 $\mu$ F	R7,8	YWR0816P103D	Metal	10K ohms 1/16W
C22	SK21A476KRD0	Electrolytic	47 $\mu$ F 10V	R9	YWR0816P183D	Metal	18K ohms 1/16W
C23-25	ECEV1EV100	Electrolytic	10 $\mu$ F 25V	R10	ERJ3GEY0R00	Carbon	0 ohms 1/16W
C44	YW5X102K5VB	Ceramic	1000 pF	R11	YWR0816P163D	Metal	16K ohms 1/16W
C45	SK21A476KRD0	Electrolytic	47 $\mu$ F 10V	R12	ERJ3GEYJ102	Carbon	1K ohms 1/16W
C46	YW5CH100J5VB	Ceramic	10 pF	R13-17	ERJ3GEYJ100	Carbon	10 ohms 1/16W
C47	YW5F104Z2VB	Ceramic	0.1 $\mu$ F	R18	YWR0816P821D	Metal	820 ohms 1/16W
C48	YW5CH330J5VB	Ceramic	33 pF	R19,22	ERJ3GEY0R00	Carbon	0 ohms 1/16W
C49	YW5F104Z2VB	Ceramic	0.1 $\mu$ F	R27	ERJ3GEYJ103	Carbon	10K ohms 1/16W
C50,52	YW5CH220J5VB	Ceramic	22 pF	R28	ERJ3GEYJ221	Carbon	220 ohms 1/16W
C54,55	YW5F104Z2VB	Ceramic	0.1 $\mu$ F	R29	ERJ3GEYJ102	Carbon	1K ohms 1/16W
C56,57	YW5CH220J5VB	Ceramic	22 pF	R30	ERJ3GEYJ331	Carbon	330 ohms 1/16W
C60	YW5X102K5VB	Ceramic	1000 pF	R31	ERJ3GEYJ471	Carbon	470 ohms 1/16W
L1	EIC4EJ010E	Coil	1 $\mu$ H	R56	ERJ3GEYJ100	Carbon	10 ohms 1/16W
L2	YWNL32150J	Coil	15 $\mu$ H	R57	ERJ3GEY0R00	Carbon	0 ohms 1/16W
CN1	YW522052690	26-pin Connector		R58,59	ERJ3GEYJ100	Carbon	10 ohms 1/16W
CN2	YW51756394	24-pin Connector		R61,67	ERJ3GEYJ100	Carbon	10 ohms 1/16W
CN3	YW41756392	12-pin Connector		R69,70	ERJ3GEYJ100	Carbon	10 ohms 1/16W
TP1-8	YWRCT2125TPV	Test Point		R73-75	ERJ3GEYJ100	Carbon	10 ohms 1/16W
				R80	ERJ3GEYJ100	Carbon	10 ohms 1/16W
				R83	ERJ3GEY0R00	Carbon	0 ohms 1/16W
				R84	ERJ3GEYJ100	Carbon	10 ohms 1/16W
				R91-93	ERJ3GEYJ101	Carbon	100 ohms 1/16W
				R98	ERJ3GEYJ680	Carbon	68 ohms 1/16W
				R201	YWR0816Q750D	Metal	75 ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R204	YWR0816P681D	Metal	680 ohms 1/16W	C407	YW5F104Z2VB	Ceramic	0.1 μF
R226	ERJ3GEY0R00	Carbon	0 ohms 1/16W	C409	SK31C335KRA	Electrolytic	3.3 μF 16V
R301	YWR0816Q750D	Metal	75 ohms 1/16W	C501	YW5F104Z2VB	Ceramic	0.1 μF
R304	YWR0816P681D	Metal	680 ohms 1/16W	C502	SK21A476KRD0	Electrolytic	47 μF 10V
R326	ERJ3GEY0R00	Carbon	0 ohms 1/16W	C503	YWSK1C105KRA	Electrolytic	1 μF 16V
R401	YWR0816Q750D	Metal	75 ohms 1/16W	C504,505	YW5F104Z2VB	Ceramic	0.1 μF
R402	YWR0816P202D	Metal	2K ohms 1/16W	C506	SK21C336KRD0	Electrolytic	33 μF 16V
R403	YWR0816P302D	Metal	3K ohms 1/16W	C507	YW5F104Z2VB	Ceramic	0.1 μF
R404	YWR0816P681D	Metal	680 ohms 1/16W	C508	SK21C336KRD0	Electrolytic	33 μF 16V
R405	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W	C509	YW5CH330J5VB	Ceramic	33 pF
R406	ERJ3GEYJ105	Carbon	1M ohms 1/16W	CT1-3	TZBX4R500BAT	Trimmer Capacitor	
R426	ERJ3GEY0R00	Carbon	0 ohms 1/16W	L6,7	YWBML21B03PB	Coil	
R501	YWR0816Q750D	Metal	75 ohms 1/16W	CF201,301	YWHF50ACB32T	Filter	
R504	YWR0816P681D	Metal	680 ohms 1/16W	CF401,501	YWHF50ACB32T	Filter	
R526	ERJ3GEY0R00	Carbon	0 ohms 1/16W	CN1,2	YW51756394	Connector	
C1	YW5F104Z2VB	Ceramic	0.1 μF	CN3-5	YW41756386	Connector	
C2	ECEV0JV220	Electrolytic	22 μF 6.3V	TP1-10	YWRCT2125TPV	Test -Pin	
C3	YW5X103K2VB	Ceramic	0.01 μF	M15	YWV5KA1337A2	Case for Heat Sink	
C4	SK21C336KRD0	Electrolytic	33 μF 16V	M16	YWV2FA0599A4	Cushion A for Heat Sink	
C5	YW5F104Z2VB	Ceramic	0.1 μF	M17	YWV2FA0600A4	Cushion B for Heat Sink	
C6	ECEV0JV220	Electrolytic	22 μF 6.3V	SYSTEM BOARD			
C7	YW5X103K2VB	Ceramic	0.01 μF				
C8,9	SK21C336KRD0	Electrolytic	33 μF 16V				
C10,11	YW5F104Z2VB	Ceramic	0.1 μF				
C12	YW5CH681J2VB	Ceramic	680 pF				
C13	YW5CH220J5VB	Ceramic	22 pF	PCB3 (RTL)	YWVKCE550P2A	Printed Circuit Board Assy	
C15	YW5F104Z2VB	Ceramic	0.1 μF	IC1	YWL7A0425	LSI	
C16	YW5CH100D5VB	Ceramic	10 pF	IC2	YWMN18885	LSI	
C17,19	YW5F104Z2VB	Ceramic	0.1 μF	IC3	YWM27C512F52	IC	
C21-32	YW5F104Z2VB	Ceramic	0.1 μF	IC4	43256AGU10L	IC	
C34,35	YW5F104Z2VB	Ceramic	0.1 μF	IC5,6	YWUPD4081BG	IC	
C36	SK21C336KRD0	Electrolytic	33 μF 16V	IC7	YWUPD4011BG	IC	
C37	YW5F104Z2VB	Ceramic	0.1 μF	IC8	YWUPD4081BG	IC	
C38	SK21C336KRD0	Electrolytic	33 μF 16V	IC9	NJM2904M	IC	
C39-45	YW5F104Z2VB	Ceramic	0.1 μF	IC10	YWM51957BFP	IC	
C46	SK21C336KRD0	Electrolytic	33 μF 16V	IC12	YWM62352GP	IC	
C47-50	YW5F104Z2VB	Ceramic	0.1 μF	IC13	YWUPC4064G2	IC	
C51	SK21C336KRD0	Electrolytic	33 μF 16V	IC14	YWUPD4081BG	IC	
C52	YW5F224Z1VB	Ceramic	0.22 μF	IC15	YWM51957BFP	IC	
C61-63	YW5CH330J5VB	Ceramic	33 pF	IC16	UPD74HC4066G	IC	
C201	YW5F104Z2VB	Ceramic	0.1 μF	IC17	YWUPD6450601	IC	
C202	SK21A476KRD0	Electrolytic	47 μF 10V	IC18	YWRTC450315B	IC	
C203	YWSK1C105KRA	Electrolytic	1 μF 16V	IC19	NJM2902M	IC	
C204,205	YW5F104Z2VB	Ceramic	0.1 μF	Q1,2	2SD1819-QRS	Transistor	
C206	SK21C336KRD0	Electrolytic	33 μF 16V	Q9	2SB1219-QRS	Transistor	
C207	YW5F104Z2VB	Ceramic	0.1 μF	Q10-12	2SD1819-QRS	Transistor	
C208	SK21C336KRD0	Electrolytic	33 μF 16V	Q13	2SB1218-QRS	Transistor	
C301	YW5F104Z2VB	Ceramic	0.1 μF	Q14	2SB1219-QRS	Transistor	
C302	SK21A476KRD0	Electrolytic	47 μF 10V	Q15	2SD1819-QRS	Transistor	
C303	YWSK1C105KRA	Electrolytic	1 μF 16V	Q16	2SB766A-QR	Transistor	
C304,305	YW5F104Z2VB	Ceramic	0.1 μF	Q17	2SD1819-QRS	Transistor	
C307,401	YW5F104Z2VB	Ceramic	0.1 μF				
C402	SK21A476KRD0	Electrolytic	47 μF 10V				
C403	YWSK1C105KRA	Electrolytic	1 μF 16V				
C404,405	YW5F104Z2VB	Ceramic	0.1 μF				

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
Q18	2SD874A-RS	Transistor	R173	YWR0816P123D	Metal 12K ohms 1/16W
Q19	2SB1218-QRS	Transistor	R174	ERJ3GEYJ470	Carbon 47 ohms 1/16W
Q20	2SB766A-QR	Transistor	R175	YWR0816P472D	Metal 4.7K ohms 1/16W
Q21	2SD1819-QRS	Transistor	R176,177	YWR0816P332D	Metal 3.3K ohms 1/16W
D1,3	MA141K	Diode	R178	ERJ3GEYJ470	Carbon 47 ohms 1/16W
D4-6	MA141K	Diode	R179	ERJ3GEYJ473	Carbon 47K ohms 1/16W
D7	MA143	Diode	R180	ERJ3GEYJ102	Carbon 1K ohms 1/16W
D8-10	MA141K	Diode	R181	ERJ3GEYJ473	Carbon 47K ohms 1/16W
R5,6	ERJ3GEYJ470	Carbon 47 ohms 1/16W	R182	ERJ3GEYJ472	Carbon 4.7K ohms 1/16W
R7,8	ERJ3GEYJ102	Carbon 1K ohms 1/16W	R183	YWR0816P682D	Metal 6.8K ohms 1/16W
R9,10	ERJ3GEYJ683	Carbon 68K ohms 1/16W	R184	YWR0816P123D	Metal 12K ohms 1/16W
R11,12	ERJ3GEYJ224	Carbon 220K ohms 1/16W	R185	ERJ3GEYJ473	Carbon 47K ohms 1/16W
R13	ERJ3GEYJ105	Carbon 1M ohms 1/16W	R186	ERJ3GEYJ472	Carbon 4.7K ohms 1/16W
R14,15	ERJ3GEYJ101	Carbon 100 ohms 1/16W	R187	ERJ3GEYJ224	Carbon 220K ohms 1/16W
R16	ERJ3GEYJ473	Carbon 47K ohms 1/16W	R188-191	ERJ3GEYJ473	Carbon 47K ohms 1/16W
R17	ERJ3GEYJ103	Carbon 10K ohms 1/16W	R192	ERJ3GEYJ122	Carbon 1.2K ohms 1/16W
R18	ERJ3GEYJ102	Carbon 1K ohms 1/16W	R193	ERJ3GEYJ273	Carbon 27K ohms 1/16W
R19	ERJ3GEYJ473	Carbon 47K ohms 1/16W	R194	ERJ3GEYJ153	Carbon 15K ohms 1/16W
R20-46	ERJ3GEYJ101	Carbon 100 ohms 1/16W	R195	ERJ3GEYJ912	Carbon 9.1K ohms 1/16W
R47-63	ERJ3GEYJ102	Carbon 1K ohms 1/16W	R196	ERJ3GEYJ183	Carbon 18K ohms 1/16W
R64-66	ERJ3GEYJ473	Carbon 47K ohms 1/16W	R197	ERJ3GEYJ103	Carbon 10K ohms 1/16W
R67	YWR0816P103D	Metal 10K ohms 1/16W	R198	ERJ3GEYJ105	Carbon 1M ohms 1/16W
R68	YWR0816P303D	Metal 30K ohms 1/16W	R199	ERJ3GEYJ472	Carbon 4.7K ohms 1/16W
R69	YWR0816P103D	Metal 10K ohms 1/16W	R200	ERJ3GEYJ222	Carbon 2.2K ohms 1/16W
R70-85	ERJ3GEYJ101	Carbon 100 ohms 1/16W	R201	ERJ3GEYJ393	Carbon 39K ohms 1/16W
R86	ERJ3GEYJ102	Carbon 1K ohms 1/16W	R202	ERJ3GEYJ513	Carbon 51K ohms 1/16W
R87	ERJ3GEYJ473	Carbon 47K ohms 1/16W	R203	ERJ3GEYJ473	Carbon 47K ohms 1/16W
R88-91	ERJ3GEYJ470	Carbon 47 ohms 1/16W	R204,205	ERJ3GEYJ472	Carbon 4.7K ohms 1/16W
R92,94	ERJ3GEYOR00	Carbon 0 ohms 1/16W	R206	ERJ3GEYJ102	Carbon 1K ohms 1/16W
R95-98	ERJ3GEYJ102	Carbon 1K ohms 1/16W	R208,209	ERJ3GEYOR00	Carbon 0 ohms 1/16W
R99	ERJ3GEYJ473	Carbon 47K ohms 1/16W	R211,212	ERJ3GEYJ102	Carbon 1K ohms 1/16W
R100-121	ERJ3GEYJ102	Carbon 1K ohms 1/16W	R213	ERJ3GEYJ103	Carbon 10K ohms 1/16W
R122-129	ERJ3GEYJ101	Carbon 100 ohms 1/16W	R214	ERJ3GEYJ331	Carbon 330 ohms 1/16W
R130-134	ERJ3GEYJ102	Carbon 1K ohms 1/16W	R215	ERJ3GEYJ102	Carbon 1K ohms 1/16W
R135	ERJ3GEYJ472	Carbon 4.7K ohms 1/16W	R216	YWR0816P133D	Metal 13K ohms 1/16W
R137	ERJ3GEYJ473	Carbon 47K ohms 1/16W	R217	YWR0816R393D	Metal 39K ohms 1/16W
R138	ERJ3GEYJ103	Carbon 10K ohms 1/16W	R218	YWR0816P153D	Metal 15K ohms 1/16W
R140	ERJ3GEYJ472	Carbon 4.7K ohms 1/16W	R219	YWR0816R473D	Metal 47K ohms 1/16W
R141	YWR0816P472D	Metal 4.7K ohms 1/16W	R220	ERJ3GEYJ331	Carbon 330 ohms 1/16W
R142	YWR0816P123D	Metal 12K ohms 1/16W	R221	ERJ3GEYJ102	Carbon 1K ohms 1/16W
R151-154	ERJ3GEYJ101	Carbon 100 ohms 1/16W	R222	YWR0816P133D	Metal 13K ohms 1/16W
R155	YWR0816R433D	Metal 43K ohms 1/16W	R223	YWR0816R393D	Metal 39K ohms 1/16W
R156	YWR0816P272D	Metal 2.7K ohms 1/16W	R224	YWR0816P153D	Metal 15K ohms 1/16W
R157	YWR0816R433D	Metal 43K ohms 1/16W	R225	YWR0816R473D	Metal 47K ohms 1/16W
R158	YWR0816P272D	Metal 2.7K ohms 1/16W	R226	ERJ3GEYJ331	Carbon 330 ohms 1/16W
R159	YWR0816R433D	Metal 43K ohms 1/16W	R227	ERJ3GEYJ102	Carbon 1K ohms 1/16W
R160	YWR0816P272D	Metal 2.7K ohms 1/16W	R228	YWR0816P133D	Metal 13K ohms 1/16W
R161,162	ERJ3GEYJ101	Carbon 100 ohms 1/16W	R229	YWR0816R393D	Metal 39K ohms 1/16W
R164,165	ERJ3GEYOR00	Carbon 0 ohms 1/16W	R230	YWR0816P153D	Metal 15K ohms 1/16W
R167	YWR0816P163D	Metal 16K ohms 1/16W	R231	YWR0816R473D	Metal 47K ohms 1/16W
R168	YWR0816P202D	Metal 2K ohms 1/16W	C1	YW5F104Z2VB	Ceramic 0.1 µF
R169	YWR0816P123D	Metal 12K ohms 1/16W	C2	SK31C335KRA	Electrolytic 3.3 µF 16V
R170	ERJ3GEYJ470	Carbon 47 ohms 1/16W	C3	YW5F104Z2VB	Ceramic 0.1 µF
R171	YWR0816P163D	Metal 16K ohms 1/16W	C4-7	YW5CH151J5VB	Ceramic 150 pF
R172	YWR0816P202D	Metal 2K ohms 1/16W	C8,9	YW5F104Z2VB	Ceramic 0.1 µF

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
C10	SK21C475KRB	Electrolytic 4.7 $\mu$ F 16V	<b>PREAMP / ENCODER BOARD</b>		
C11-14	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	PCB4 (RTL)	YWVKB E550E3A	Printed Circuit Board Assy
C15	YW5K1C105KRA	Electrolytic 1 $\mu$ F 16V	IC1	NJM2904M	IC
C16	YW5K1C106KRC	Electrolytic 10 $\mu$ F 16V	IC2	UPD74HC4049G	IC
C17	YW5K1C105KRA	Electrolytic 1 $\mu$ F 16V	IC3	YWM51272FP	IC
C18	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	IC4	YWUPD4050BG	IC
C19	YW5CH151J5VB	Ceramic 150 pF	IC5	YWUPD4053BG	IC
C22	YW5K1C106KRC	Electrolytic 10 $\mu$ F 16V	IC6	YWCXA1229M	IC
C24-29	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	IC8-10	YWUPD4052BG	IC
C30	YW5K1V104KRA	Electrolytic 0.1 $\mu$ F 35V	IC11	YWTC4W53FL	IC
C31-33	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	IC401	YWUPC4062G2	IC
C36	YW5K1V105KRB	Electrolytic 1 $\mu$ F 35V	Q1	2SB766-RS	Transistor
C37	SK21C475KRB	Electrolytic 4.7 $\mu$ F 16V	Q3	2SD1819-QRS	Transistor
C39,41	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	Q4	2SB1218-QRS	Transistor
C43-46	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	Q5	2SD1819-QRS	Transistor
C47	SK21C336KRD0	Electrolytic 33 $\mu$ F 16V	Q6	2SB1218-QRS	Transistor
C48	YW5X102K5VB	Ceramic 1000 pF	Q7	2SD1819-QRS	Transistor
C49	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	Q8	2SA1532-CD	Transistor
C50	YW5X223K2VB	Ceramic 0.022 $\mu$ F	Q9,11	2SC3931-CD	Transistor
C51,52	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	Q12-18	2SC3931-CD	Transistor
C53	YW5UJ180J5VB	Ceramic 18 pF	Q19	XP4601	Transistor
C54	YW5UJ120J5VB	Ceramic 12 pF 50V	Q20	2SD1820-QRS	Transistor
C55	SK20J106KRB	Electrolytic 10 $\mu$ F 6.3V	Q21	2SB1219-QRS	Transistor
C56	SK21C225KRA	Electrolytic 2.2 $\mu$ F 16V	Q22-25	2SD1819-QRS	Transistor
C57	YW5CH040D5VB	Ceramic 4 pF	Q26-28	2SC3931-CD	Transistor
C59	SK20J336KRC	Electrolytic 33 $\mu$ F 6.3V	Q29	2SA1532-CD	Transistor
C60	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	Q30,32	2SC3931-CD	Transistor
C61,62	YW5X103K2VB	Ceramic 0.01 $\mu$ F	Q33-35	2SC3931-CD	Transistor
C63	SK20J686KRD0	Electrolytic 68 $\mu$ F 6.3V	Q36	2SD1819-QRS	Transistor
C64	SK1V685KRD0	Electrolytic 6.8 $\mu$ F 35V	Q42,44	2SC3931-CD	Transistor
C65	ECEV0JV220	Electrolytic 22 $\mu$ F 6.3V	Q46-49	2SC3931-CD	Transistor
C66	SK21C336KRD0	Electrolytic 33 $\mu$ F 16V	Q50	XP4601	Transistor
C67	ECEV0JV220	Electrolytic 22 $\mu$ F 6.3V	Q51	2SD1820-QRS	Transistor
C68,69	SK21C336KRD0	Electrolytic 33 $\mu$ F 16V	Q52	2SB1219-QRS	Transistor
C70	ECEV0JV220	Electrolytic 22 $\mu$ F 6.3V	Q53-55	2SC3931-CD	Transistor
CT1	ECRJA010A12	Trimmer Capacitor	Q56	XP4601	Transistor
L1	ELJFA470KF	Coil 47 $\mu$ H	Q57	2SD1820-QRS	Transistor
L2,3	YWNL321R0J	Coil 320 $\mu$ H	Q58	2SB1219-QRS	Transistor
SW1	YW5KQDPA	Push Switch	Q59-61	2SC3931-CD	Transistor
X1	YWCSTCS8MT	Oscillator	Q62	XP4601	Transistor
CN1-3	YW51756394	24-pin Connector	Q63	2SD1820-QRS	Transistor
CN4-6	YW71756436	16-pin Connector	Q64	2SB1219-QRS	Transistor
BAT1	BR30321F2	Battery	Q65-67	2SC3931-CD	Transistor
TP1-6	YWRCT2125TPV	Test- Pin	Q68	XP4601	Transistor
			Q69	2SD1820-QRS	Transistor
			Q70	2SB1219-QRS	Transistor
			Q71-73	2SC3931-CD	Transistor
			Q74	XP4601	Transistor
			Q75	2SD1820-QRS	Transistor
			Q76	2SB1219-QRS	Transistor
			Q77	2SC3931-CD	Transistor
			Q78-81	2SA1532-CD	Transistor



REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
Q82	2SC3931-CD	Transistor	D9	MA143	Diode
Q83,84	2SA1532-CD	Transistor	R1,2	YWR0816R473D	Metal 47K ohms 1/16W
Q85-87	2SC3931-CD	Transistor	R3	YWR0816P472D	Metal 4.7K ohms 1/16W
Q401	2SA1532-CD	Transistor	R4	YWR0816P512D	Metal 5.1K ohms 1/16W
Q402	2SB766A-QR	Transistor	R5	ERJ3GEYJ101	Carbon 100 ohms 1/16W
Q403	2SD1819-QRS	Transistor	R6	ERJ3GEYJ102	Carbon 1K ohms 1/16W
Q404	2SD874A-RS	Transistor	R7	YWR0816R393D	Metal 39K ohms 1/16W
Q405	2SB1218-QRS	Transistor	R8	YWR0816P303D	Metal 30K ohms 1/16W
Q501	2SA1532-CD	Transistor	R9	YWR0816P101D	Metal 100 ohms 1/16W
Q502	3SK157	FET	R11	ERJ3GEYJ101	Carbon 100 ohms 1/16W
Q503	2SC3931-CD	Transistor	R13	ERJ3GEYJ102	Carbon 1K ohms 1/16W
Q504	2SA1532-CD	Transistor	R14	ERJ3GEYJ472	Carbon 4.7K ohms 1/16W
Q505	3SK157	FET	R15	ERJ3GEYJ392	Carbon 3.9K ohms 1/16W
Q506	2SC3931-CD	Transistor	R16	ERJ3GEYJ103	Carbon 10K ohms 1/16W
Q507,508	2SD1819-QRS	Transistor	R17	ERJ3GEYJ272	Carbon 2.7K ohms 1/16W
Q509,510	2SC3931-CD	Transistor	R18	ERJ3GEYJ102	Carbon 1K ohms 1/16W
Q511-513	2SA1532-CD	Transistor	R19	ERJ3GEYJ562	Carbon 5.6K ohms 1/16W
Q514	2SC3931-CD	Transistor	R20	ERJ3GEYJ182	Carbon 1.8K ohms 1/16W
Q515	2SA1532-CD	Transistor	R21	ERJ3GEYJ221	Carbon 220 ohms 1/16W
Q516,517	2SC3931-CD	Transistor	R22	ERJ3GEYJ392	Carbon 3.9K ohms 1/16W
Q518	2SA1532-CD	Transistor	R23	ERJ3GEYJ103	Carbon 10K ohms 1/16W
Q519	3SK157	FET	R24	ERJ3GEYJ272	Carbon 2.7K ohms 1/16W
Q520	2SC3931-CD	Transistor	R25	ERJ3GEYJ102	Carbon 1K ohms 1/16W
Q601	2SA1532-CD	Transistor	R26	ERJ3GEYJ562	Carbon 5.6K ohms 1/16W
Q602	3SK157	FET	R27	ERJ3GEYJ182	Carbon 1.8K ohms 1/16W
Q603	2SC3931-CD	Transistor	R28-30	ERJ3GEYJ221	Carbon 220 ohms 1/16W
Q604	2SA1532-CD	Transistor	R31	ERJ3GEYJ392	Carbon 3.9K ohms 1/16W
Q605	3SK157	FET	R32	ERJ3GEYJ152	Carbon 1.5K ohms 1/16W
Q606	2SC3931-CD	Transistor	R33	ERJ3GEYJ822	Carbon 8.2K ohms 1/16W
Q607,608	2SD1819-QRS	Transistor	R34	ERJ3GEYJ682	Carbon 6.8K ohms 1/16W
Q609,610	2SC3931-CD	Transistor	R35	ERJ3GEYJ432	Carbon 4.3K ohms 1/16W
Q611-613	2SA1532-CD	Transistor	R36	ERJ3GEYJ242	Carbon 2.4K ohms 1/16W
Q614	2SC3931-CD	Transistor	R39,40	ERJ3GEYJ102	Carbon 1K ohms 1/16W
Q615	2SA1532-CD	Transistor	R41	ERJ3GEYJ332	Carbon 3.3K ohms 1/16W
Q616,617	2SC3931-CD	Transistor	R42	ERJ3GEYJ622	Carbon 6.2K ohms 1/16W
Q618	2SA1532-CD	Transistor	R43	ERJ3GEYJ272	Carbon 2.7K ohms 1/16W
Q619	3SK157	FET	R44	ERJ3GEYJ472	Carbon 4.7K ohms 1/16W
Q620	2SC3931-CD	Transistor	R45	ERJ3GEYJ100	Carbon 10 ohms 1/16W
Q701	2SA1532-CD	Transistor	R46,47	ERJ3GEYJ272	Carbon 2.7K ohms 1/16W
Q702	3SK157	FET	R48	ERJ3GEYJ472	Carbon 4.7K ohms 1/16W
Q703	2SC3931-CD	Transistor	R49	ERJ3GEYJ101	Carbon 100 ohms 1/16W
Q704	2SA1532-CD	Transistor	R50,51	ERJ3GEYJ362	Carbon 3.6K ohms 1/16W
Q705	3SK157	FET	R52	ERJ3GEYJ101	Carbon 100 ohms 1/16W
Q706	2SC3931-CD	Transistor	R54	ERJ3GEYJ332	Carbon 3.3K ohms 1/16W
Q707,708	2SD1819-QRS	Transistor	R55	YWR0816P202D	Metal 2K ohms 1/16W
Q709,710	2SC3931-CD	Transistor	R56	ERJ3GEYJ332	Carbon 3.3K ohms 1/16W
Q711-713	2SA1532-CD	Transistor	R57	YWR0816P222D	Metal 2.2K ohms 1/16W
Q714	2SC3931-CD	Transistor	R58-61	ERJ3GEYJ100	Carbon 10 ohms 1/16W
Q715	2SA1532-CD	Transistor	R62,63	ERJ3GEYJ221	Carbon 220 ohms 1/16W
Q716,717	2SC3931-CD	Transistor	R64	ERJ3GEYJ392	Carbon 3.9K ohms 1/16W
Q718	2SA1532-CD	Transistor	R65-67	ERJ3GEYJ222	Carbon 2.2K ohms 1/16W
Q719	3SK157	FET	R68	ERJ3GEYJ102	Carbon 1K ohms 1/16W
Q720	2SC3931-CD	Transistor	R69,70	ERJ3GEYJ221	Carbon 220 ohms 1/16W
D1,3	MA143	Diode	R71	ERJ3GEYJ332	Carbon 3.3K ohms 1/16W
D5,8	MA143	Diode	R72-74	ERJ3GEYJ222	Carbon 2.2K ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R75	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W	R202	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R76	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W	R203	YWR0816P222D	Metal	2.2K ohms 1/16W
R77-79	ERJ3GEY0R00	Carbon	0 ohms 1/16W	R204-207	ERJ3GEYJ100	Carbon	10 ohms 1/16W
R80,81	ERJ3GEYJ223	Carbon	22K ohms 1/16W	R209	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R82,84	YWR0816P103D	Metal	10K ohms 1/16W	R210	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R86,87	ERJ3GEYJ102	Carbon	1K ohms 1/16W	R212	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R88	ERJ3GEYJ563	Carbon	56K ohms 1/16W	R213	YWR0816P202D	Metal	2K ohms 1/16W
R89	ERJ3GEYJ272	Carbon	2.7K ohms 1/16W	R214	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R90	ERJ3GEYJ471	Carbon	470 ohms 1/16W	R215	YWR0816P222D	Metal	2.2K ohms 1/16W
R91	ERJ3GEYJ272	Carbon	2.7K ohms 1/16W	R216-219	ERJ3GEYJ100	Carbon	10 ohms 1/16W
R92	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W	R221	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R93	ERJ3GEYJ272	Carbon	2.7K ohms 1/16W	R222	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R94	ERJ3GEYJ561	Carbon	560 ohms 1/16W	R224	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R95,96	ERJ3GEYJ272	Carbon	2.7K ohms 1/16W	R225	YWR0816P202D	Metal	2K ohms 1/16W
R97,98	ERJ3GEYJ221	Carbon	220 ohms 1/16W	R226	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R99	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W	R227	YWR0816P222D	Metal	2.2K ohms 1/16W
R100	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W	R228-231	ERJ3GEYJ100	Carbon	10 ohms 1/16W
R101	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R232	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R102	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W	R233	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R103	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W	R234,235	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W
R104	ERJ3GEYJ242	Carbon	2.4K ohms 1/16W	R236	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R105	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R237	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W
R107	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W	R238,239	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R108	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W	R240	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R109	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W	R241	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R110	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R242	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R112	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W	R243	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R113	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W	R244	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R114	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W	R245	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R115	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R246	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R117-119	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W	R247	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R120	ERJ3GEYJ182	Carbon	1.8K ohms 1/16W	R248	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R121,122	ERJ3GEYJ221	Carbon	220 ohms 1/16W	R249	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R123	ERJ3GEYJ102	Carbon	1K ohms 1/16W	R250	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R127	ERJ3GEYJ333	Carbon	33K ohms 1/16W	R251	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R170	ERJ3GEY0R00	Carbon	0 ohms 1/16W	R252	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R172	YWR0816P273D	Metal	27K ohms 1/16W	R253,254	YWR0816P102D	Metal	1K ohms 1/16W
R173	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R255	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W
R174	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R256	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R176	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W	R257	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R177	YWR0816P202D	Metal	2K ohms 1/16W	R258	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R178	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W	R259	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R179	YWR0816P222D	Metal	2.2K ohms 1/16W	R260	YWR0816P223D	Metal	22K ohms 1/16W
R180-183	ERJ3GEYJ100	Carbon	10 ohms 1/16W	R261	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R185	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R262,263	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W
R187	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R264	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R188	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W	R265	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R189	YWR0816P202D	Metal	2K ohms 1/16W	R266	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R190	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W	R267	YWR0816P223D	Metal	22K ohms 1/16W
R191	YWR0816P222D	Metal	2.2K ohms 1/16W	R268	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W
R192-195	ERJ3GEYJ100	Carbon	10 ohms 1/16W	R269,270	ERJ3GEYJ104	Carbon	100K ohms 1/16W
R197	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R271	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R198	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R272	ERJ3GEYJ122	Carbon	1.2K ohms 1/16W
R200	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W	R275	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R201	YWR0816P202D	Metal	2K ohms 1/16W	R275	ERJ3GEY0R00	Carbon	0 ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R401	ERJ3GEYJ153	Carbon	15K ohms 1/16W	R602	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R402	ERJ3GEYJ153	Carbon	15K ohms 1/16W	R603	ERJ3GEYJ242	Carbon	2.4K ohms 1/16W
R403	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W	R604	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R404	ERJ3GEYJ331	Carbon	330 ohms 1/16W	R605,606	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R405	ERJ3GEYJ102	Carbon	1K ohms 1/16W	R607	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R406	YWR0816P912D	Metal	9.1K ohms 1/16W	R608	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R407	YWR0816P123D	Metal	12K ohms 1/16W	R609	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R408	YWR0816P103D	Metal	10K ohms 1/16W	R610	ERJ3GEYJ303	Carbon	30K ohms 1/16W
R409	YWR0816P103D	Metal	10K ohms 1/16W	R611	ERJ3GEYJ220	Carbon	22 ohms 1/16W
R410	ERJ3GEYJ331	Carbon	330 ohms 1/16W	R612	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R411	ERJ3GEYJ102	Carbon	1K ohms 1/16W	R613	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R412	YWR0816P912D	Metal	9.1K ohms 1/16W	R614	ERJ3GEYJ330	Carbon	33 ohms 1/16W
R413	YWR0816P123D	Metal	12K ohms 1/16W	R615	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R414	YWR0816P103D	Metal	10K ohms 1/16W	R616	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R415	YWR0816P103D	Metal	10K ohms 1/16W	R617	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R501	ERJ3GEYJ241	Carbon	240 ohms 1/16W	R618	ERJ3GEYJ155	Carbon	1M ohms 1/16W
R502	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R619	ERJ3GEYJ302	Carbon	3K ohms 1/16W
R503	ERJ3GEYJ242	Carbon	2.4K ohms 1/16W	R620	ERJ3GEYJ271	Carbon	270 ohms 1/16W
R504	ERJ3GEY0R00	Carbon	0 ohms 1/16W	R621	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R505,506	ERJ3GEYJ153	Carbon	15K ohms 1/16W	R622	ERJ3GEYJ752	Carbon	7.5K ohms 1/16W
R507	ERJ3GEY0R00	Carbon	0 ohms 1/16W	R623	ERJ3GEYJ561	Carbon	560 ohms 1/16W
R508	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W	R624	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R509	ERJ3GEYJ153	Carbon	15K ohms 1/16W	R625	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R510	ERJ3GEYJ303	Carbon	30K ohms 1/16W	R626	ERJ3GEYJ562	Carbon	5.6K ohms 1/16W
R511	ERJ3GEYJ220	Carbon	22 ohms 1/16W	R627	ERJ3GEYJ751	Carbon	750 ohms 1/16W
R512	ERJ3GEYJ153	Carbon	15K ohms 1/16W	R628	ERJ3GEYJ752	Carbon	7.5K ohms 1/16W
R513	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W	R629	ERJ3GEYJ562	Carbon	5.6K ohms 1/16W
R514	ERJ3GEYJ330	Carbon	33 ohms 1/16W	R630	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R515	ERJ3GEYJ153	Carbon	15K ohms 1/16W	R631,632	ERJ3GEYJ331	Carbon	330 ohms 1/16W
R516	ERJ3GEYJ151	Carbon	150 ohms 1/16W	R633	ERJ3GEYJ822	Carbon	8.2K ohms 1/16W
R517	ERJ3GEYJ102	Carbon	1K ohms 1/16W	R634	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R518	ERJ3GEYJ155	Carbon	1.5M ohms 1/16W	R635,636	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R519	ERJ3GEYJ302	Carbon	3K ohms 1/16W	R637	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R520	ERJ3GEYJ221	Carbon	220 ohms 1/16W	R638	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R521	ERJ3GEYJ102	Carbon	1K ohms 1/16W	R639	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R522	ERJ3GEYJ752	Carbon	7.5K ohms 1/16W	R640	ERJ3GEYJ473	Carbon	47K ohms 1/16W
R523	ERJ3GEYJ561	Carbon	560 ohms 1/16W	R641	ERJ3GEYJ330	Carbon	33 ohms 1/16W
R524	ERJ3GEYJ153	Carbon	15K ohms 1/16W	R642	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R525	ERJ3GEY0R00	Carbon	0 ohms 1/16W	R701	ERJ3GEYJ241	Carbon	240 ohms 1/16W
R526	ERJ3GEYJ562	Carbon	5.6K ohms 1/16W	R702	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R527	ERJ3GEYJ751	Carbon	750 ohms 1/16W	R703	ERJ3GEYJ242	Carbon	2.4K ohms 1/16W
R528	ERJ3GEYJ752	Carbon	7.5K ohms 1/16W	R704	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R529	ERJ3GEYJ562	Carbon	5.6K ohms 1/16W	R705,706	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R530	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W	R707	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R531,532	ERJ3GEYJ331	Carbon	330 ohms 1/16W	R708	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R533	ERJ3GEYJ822	Carbon	8.2K ohms 1/16W	R709	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R534	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W	R710	ERJ3GEYJ303	Carbon	30K ohms 1/16W
R535,536	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R711	ERJ3GEYJ220	Carbon	22 ohms 1/16W
R537	ERJ3GEYJ153	Carbon	15K ohms 1/16W	R712	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R538	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W	R713	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R539	ERJ3GEYJ153	Carbon	15K ohms 1/16W	R714	ERJ3GEYJ330	Carbon	33 ohms 1/16W
R540	ERJ3GEYJ473	Carbon	47K ohms 1/16W	R715	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R541	ERJ3GEYJ330	Carbon	33 ohms 1/16W	R716	ERJ3GEYJ151	Carbon	150 ohms 1/16W
R542	ERJ3GEYJ153	Carbon	15K ohms 1/16W	R717	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R601	ERJ3GEYJ241	Carbon	240 ohms 1/16W	R718	ERJ3GEYJ155	Carbon	1M ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
R719	ERJ3GEYJ302	Carbon 3K ohms 1/16W	C28-30	ECEV1CV100	Electrolytic 10 $\mu$ F 16V
R720	ERJ3GEYJ221	Carbon 220 ohms 1/16W	C31,32	YW5CH470J5VB	Ceramic 47 pF
R721	ERJ3GEYJ102	Carbon 1K ohms 1/16W	C33	YW5CH150J5VB	Ceramic 15 pF
R722	ERJ3GEYJ752	Carbon 7.5K ohms 1/16W	C34	YW5CH620J5VB	Ceramic 62 pF
R723	ERJ3GEYJ561	Carbon 560 ohms 1/16W	C35	YW5CH221J5VB	Ceramic 220 pF
R724	ERJ3GEYJ153	Carbon 15K ohms 1/16W	C36,37	YW5CH470J5VB	Ceramic 47 pF
R725	ERJ3GEY0R00	Carbon 0 ohms 1/16W	C38	YW5CH150J5VB	Ceramic 15 pF
R726	ERJ3GEYJ562	Carbon 5.6K ohms 1/16W	C39	YW5CH620J5VB	Ceramic 62 pF
R727	ERJ3GEYJ751	Carbon 750 ohms 1/16W	C40	YW5CH221J5VB	Ceramic 220 pF
R728	ERJ3GEYJ752	Carbon 7.5K ohms 1/16W	C41,42	ECEV1CV100	Electrolytic 10 $\mu$ F 16V
R729	ERJ3GEYJ562	Carbon 5.6K ohms 1/16W	C43,44	YW5X103K2VB	Ceramic 0.01 $\mu$ F
R730	ERJ3GEYJ152	Carbon 1.5K ohms 1/16W	C45,46	ECEV1HV010	Electrolytic 1 $\mu$ F 50V
R731,732	ERJ3GEYJ331	Carbon 330 ohms 1/16W	C47,48	ECEV1CV100	Electrolytic 10 $\mu$ F 16V
R733	ERJ3GEYJ822	Carbon 8.2K ohms 1/16W	C49-51	YW5F104Z2VB	Ceramic 0.1 $\mu$ F
R734	ERJ3GEYJ222	Carbon 2.2K ohms 1/16W	C52,53	ECEV1CV470	Electrolytic 47 $\mu$ F 16V
R735,736	ERJ3GEYJ101	Carbon 100 ohms 1/16W	C54	YW5F104Z2VB	Ceramic 0.1 $\mu$ F
R737	ERJ3GEYJ153	Carbon 15K ohms 1/16W	C55	ECEV1HV010	Electrolytic 1 $\mu$ F 50V
R738	ERJ3GEYJ472	Carbon 4.7K ohms 1/16W	C56	ECEV0JV330	Electrolytic 33 $\mu$ F 6.3V
R739	ERJ3GEYJ153	Carbon 15K ohms 1/16W	C57	ECEV1CV100	Electrolytic 10 $\mu$ F 16V
R740	ERJ3GEYJ473	Carbon 47K ohms 1/16W	C58,59	YW5CH470J5VB	Ceramic 47 pF
R741	ERJ3GEYJ330	Carbon 33 ohms 1/16W	C60	YW5CH150J5VB	Ceramic 15 pF
R742	ERJ3GEYJ153	Carbon 15K ohms 1/16W	C61	YW5CH080D5VB	Ceramic 8 pF
VR1-4	EVM7JGA30B23	Variable Resistor 2K ohms	C62	ECEV1CN100	Electrolytic 10 $\mu$ F 16V
VR5	EVM7JGA30B13	Variable Resistor 1K ohms	C64	YW5F104Z2VB	Ceramic 0.1 $\mu$ F
VR6	YWRH03AVAS3W	Variable Resistor 4.7K ohms	C65	ECEV1CV100	Electrolytic 10 $\mu$ F 16V
VR7,8	YWRH03AVA15W	Variable Resistor 100K ohms	C66	YW5F104Z2VB	Ceramic 0.1 $\mu$ F
VR9	EVM7JGA30B23	Variable Resistor 2K ohms	C67	ECEV1CV100	Electrolytic 10 $\mu$ F 16V
VR10,12	EVM7JGA30B13	Variable Resistor 1K ohms	C68	YW5F104Z2VB	Ceramic 0.1 $\mu$ F
VR13,14	EVM7JGA30B13	Variable Resistor 1K ohms	C69	YW5CH151J5VB	Ceramic 150 pF
VR9	EVM7JGA30B53	Variable Resistor 5K ohms	C70	YW5CH390J5VB	Ceramic 39 pF
VR21-23	EVM7JGA30B23	Variable Resistor 2K ohms	C71	ECEV1CV100	Electrolytic 10 $\mu$ F 16V
VR24,25	EVM7JGA30B14	Variable Resistor 10K ohms	C88-90	ECEV1HV010	Electrolytic 1 $\mu$ F 50V
VR501,601	YWST3A101	Variable Resistor 100 ohms	C91,92	ECEV1CV470	Electrolytic 47 $\mu$ F 16V
VR701	YWST3A101	Variable Resistor 100 ohms	C93	ECEV1CV100	Electrolytic 10 $\mu$ F 16V
C1	ECEV0JV330	Electrolytic 33 $\mu$ F 6.3V	C94	YW5F104Z2VB	Ceramic 0.1 $\mu$ F
C2	ECEV1CV470	Electrolytic 47 $\mu$ F 16V	C95	ECEV1CV100	Electrolytic 10 $\mu$ F 16V
C3	YWSK1C106KRC	Electrolytic 10 $\mu$ F 16V	C96	ECEV0JV330	Electrolytic 33 $\mu$ F 6.3V
C4	ECEV0JV330	Electrolytic 33 $\mu$ F 6.3V	C97	YW5F104Z2VB	Ceramic 0.1 $\mu$ F
C5	ECEV0JV470S	Electrolytic 47 $\mu$ F 6.3V	C98,99	ECEV0JV330	Electrolytic 33 $\mu$ F 6.3V
C6	YWSK1C106KRC	Electrolytic 10 $\mu$ F 16V	C100	YW5F104Z2VB	Ceramic 0.1 $\mu$ F
C7	YWSK0G106KRB	Electrolytic 10 $\mu$ F 4V	C101	ECEV0JV330	Electrolytic 33 $\mu$ F 6.3V
C8	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	C102	YW5F104Z2VB	Ceramic 0.1 $\mu$ F
C9	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	C103	ECEV0JV330	Electrolytic 33 $\mu$ F 6.3V
C10	YW5CH680J5VB	Ceramic 68 pF	C104	YW5F104Z2VB	Ceramic 0.1 $\mu$ F
C11	YW5CH270J5VB	Ceramic 27 pF	C105,106	ECEV1CV100	Electrolytic 10 $\mu$ F 16V
C12	YW5CH680J5VB	Ceramic 68 pF	C107,109	YW5CH020D5VB	Ceramic 2 pF
C13	YW5CH270J5VB	Ceramic 27 pF	C111,113	YW5CH020D5VB	Ceramic 2 pF
C14,15	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	C115	YW5CH020D5VB	Ceramic 2 pF
C16,17	YW5CH470J5VB	Ceramic 47 pF	C116,118	ECEV1CV100	Electrolytic 10 $\mu$ F 16V
C18	YW5CH150J5VB	Ceramic 15 pF	C119,120	ECEV1CV100	Electrolytic 10 $\mu$ F 16V
C19	YW5CH100J5VB	Ceramic 10 pF	C121	YW5CH470J5VB	Ceramic 47 pF
C20	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	C122	ECEV1CV100	Electrolytic 10 $\mu$ F 16V
C22,23	YW5CH050D5VB	Ceramic 5 pF	C123-125	YW5F104Z2VB	Ceramic 0.1 $\mu$ F
C24	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	C126,127	ECEV1AG101	Electrolytic 100 $\mu$ F 10V
C25	ECEV0JV330	Electrolytic 33 $\mu$ F 6.3V	C128,129	ECEV1CV470	Electrolytic 47 $\mu$ F 16V
C27	YW5CH030D5VB	Ceramic 3 pF			

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
C401	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	L501,601	YWNL322R7J	Coil
C402	SK21D226KRD0	Electrolytic 22 $\mu$ F	L701	YWNL322R7J	Coil
C403	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	CF1	ELB4A518	Filter
C404	SK21C336KRD0	Electrolytic 33 $\mu$ F	CF501	YWCY4S567	Filter
C405	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	CF502	YWCY4T566	Filter
C406,407	ECEV1AG101	Electrolytic 100 $\mu$ F 10V	CF601	YWCY4S567	Filter
C501	YW5CH180J5VB	Ceramic 18 pF	CF602	YWCY4T566	Filter
C502	YW5CH150J5VB	Ceramic 15 pF	CF701	YWCY4S567	Filter
C503	YW5CH180J5VB	Ceramic 18 pF	CF702	YWCY4T566	Filter
C504	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	CN1-3	YW51756394	24-pin Connector
C505	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	CN6-8	YW21763142	22-pin Connector
C506	YWSK1E155MRB	Electrolytic 1.5 $\mu$ F 25V	CN10	YW522050890	8-pin Connector
C507	YW5CH390J5VB	Ceramic 39 pF	CN11	YW41756392	12-pin Connector
C508	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	CN12	YW51756394	24-pin Connector
C509	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	TP1-12	YWRCT2125TPV	Test-pin
C510	YW5CH220J5VB	Ceramic 22 pF	TP401,501	YWRCT2125TPV	Test-pin
C511	ECEV1CV470	Electrolytic 47 $\mu$ F 16V	TP502,601	YWRCT2125TPV	Test-pin
C512	YW5CH100J5VB	Ceramic 10 pF	TP602,701	YWRCT2125TPV	Test-pin
C514	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	TP702	YWRCT2125TPV	Test-pin
C515,516	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	<b>SYNC BOARD</b>		
C518	YW5CH220J5VB	Ceramic 22 pF	PCB5 (RTL)	YWVKCE550E3A	Printed Circuit Board Assy
C601	YW5CH180J5VB	Ceramic 18 pF	IC1	YWTC7S04F	IC
C602	YW5CH150J5VB	Ceramic 15 pF	IC3	MN73093	IC
C603	YW5CH180J5VB	Ceramic 18 pF	IC4	YWTC7SU04FL	IC
C604	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	IC5	NJM2904M	IC
C605	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	IC6	YWTC4S66FR	IC
C606	YWSK1E155MRB	Electrolytic 1.5 $\mu$ F 25V	IC7	YWUPC4062G2	IC
C607	YW5CH390J5VB	Ceramic 39 pF	IC8	YWUPD74HC04G	IC
C608	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	IC11	YWLM1881M	IC
C609	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	IC12	NJM2904M	IC
C610	YW5CH220J5VB	Ceramic 22 pF	IC13	YWTC4S11F	IC
C611	ECEV1CV470	Electrolytic 47 $\mu$ F 16V	IC14	YWUPD74HC32G	IC
C612	YW5CH100J5VB	Ceramic 10 pF	IC15	YWTC7W08F	IC
C614	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	IC23	YWTC7S04F	IC
C615,616	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	IC24	YWTC7S08F	IC
C618	YW5CH220J5VB	Ceramic 22 pF	IC25,26	UPD74HC164G	IC
C701	YW5CH180J5VB	Ceramic 18 pF	IC27	YWTC7W04FL	IC
C702	YW5CH150J5VB	Ceramic 15 pF	IC28-30	UPD74HC164G	IC
C703	YW5CH180J5VB	Ceramic 18 pF	IC31	YWTC7S04F	IC
C704	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	Q2	2SB1218-QRS	Transistor
C705	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	Q3-6	2SK662-PQR	FET
C706	YWSK1E155MRB	Electrolytic 0.1 $\mu$ F	Q7	2SD1819-QRS	Transistor
C707	YW5CH390J5VB	Ceramic 39 pF	Q8	2SB1218-QRS	Transistor
C708	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	Q9	2SB766-RS	Transistor
C709	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	Q10	2SC3931-CD	Transistor
C710	YW5CH220J5VB	Ceramic 22 pF	Q13	2SB1218-QRS	Transistor
C711	ECEV1CV470	Electrolytic 47 $\mu$ F 16V	Q15,16	2SC3931-CD	Transistor
C712	YW5CH100J5VB	Ceramic 10 pF	Q17	2SB1218-QRS	Transistor
C714	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	D1-6	MA372	Diode
C715,716	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	D8	MA141K	Diode
C718	YW5CH220J5VB	Ceramic 22 pF	R1	ERJ3GEYJ103	Carbon 10K ohms 1/16W
CT1,501	TZBX4R500BAT	Trimmer Capacitor			
CT601,701	TZBX4R500BAT	Trimmer Capacitor			
DL5	ELB4A514	Delay Line			
L1-4	YWNL325R6J	Coil			

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R2,3	ERJ3GEYJ223	Carbon	22K ohms 1/16W	R81-83	YWR0816R473D	Metal	47K ohms 1/16W
R4	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R84	YWR0816R513D	Metal	51K ohms 1/16W
R5,6	ERJ3GEYJ223	Carbon	22K ohms 1/16W	R85	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R7,8	ERJ3GEY0R00	Carbon	0 ohms 1/16W	R86	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R11	YWR0816P822D	Metal	8.2K ohms 1/16W	R89	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R12	YWR0816P332D	Metal	3.3K ohms 1/16W	R91	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R13	YWR0816P752D	Metal	7.5K ohms 1/16W	R92	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R15	YWR0816P751D	Metal	750 ohms 1/16W	R94	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R16	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W	R95	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R17	ERJ3GEYJ102	Carbon	1K ohms 1/16W	R96	ERJ3GEYJ272	Carbon	2.7K ohms 1/16W
R18	ERJ3GEYJ473	Carbon	47K ohms 1/16W	R100	ERJ3GEYJ561	Carbon	560 ohms 1/16W
R19,20	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R101	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R21	ERJ3GEYJ105	Carbon	1M ohms 1/16W	R104	ERJ3GEYJ560	Carbon	56 ohms 1/16W
R22	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W	R105	ERJ3GEYJ912	Carbon	9.1K ohms 1/16W
R23-25	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R106	ERJ3GEYJ512	Carbon	5.1K ohms 1/16W
R28	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R107	ERJ3GEYJ182	Carbon	1.8K ohms 1/16W
R29,30	ERJ3GEYJ333	Carbon	33K ohms 1/16W	R108	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R31	ERJ3GEYJ184	Carbon	180K ohms 1/16W	R109	ERJ3GEYJ820	Carbon	82 ohms 1/16W
R32	YWR0816P103D	Metal	10K ohms 1/16W	R110	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R33,34	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R111,112	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R35	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W	R118	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R36	ERJ3GEYJ511	Carbon	510 ohms 1/16W	R120	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R37	ERJ3GEYJ334	Carbon	330K ohms 1/16W	R121	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R38	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W	R122	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R39	ERJ3GEYJ104	Carbon	100K ohms 1/16W	R123	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R40	ERJ3GEYJ823	Carbon	82K ohms 1/16W	R127	YWR0816P221D	Metal	220 ohms 1/16W
R41	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W	R128	YWR0816P182D	Metal	1.8K ohms 1/16W
R42	ERJ3GEYJ473	Carbon	47K ohms 1/16W	R130	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R43	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W	R131,132	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R45	ERJ3GEY0R00	Carbon	0 ohms 1/16W	R137	ERJ3GEYJ562	Carbon	5.6K ohms 1/16W
R47	ERJ3GEYJ105	Carbon	1M ohms 1/16W	R138	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R48,49	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R141	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R50	ERJ3GEYJ102	Carbon	1K ohms 1/16W	R142	ERJ3GEYJ334	Carbon	330K ohms 1/16W
R51	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R143	ERJ3GEYJ224	Carbon	220K ohms 1/16W
R52	ERJ3GEYJ105	Carbon	1M ohms 1/16W	R144	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R53	ERJ3GEYJ221	Carbon	220 ohms 1/16W	R145,146	ERJ3GEYJ104	Carbon	100K ohms 1/16W
R54	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R148	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R56-58	ERJ3GEYJ102	Carbon	1K ohms 1/16W	R149	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R59	YWR0816R473D	Metal	47K ohms 1/16W	R162	ERJ3GEYJ331	Carbon	330 ohms 1/16W
R60-62	YWR0816R104D	Metal	100K ohms 1/16W	R164,165	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R63	YWR0816P222D	Metal	2.2K ohms 1/16W	R167-170	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R64	YWR0816P223D	Metal	22K ohms 1/16W	R171	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R65	YWR0816P103D	Metal	10K ohms 1/16W	R172-174	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R66	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R179	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R67	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R180	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R68	ERJ3GEYJ684	Carbon	680K ohms 1/16W	VR1	EVM7JGA30B14	Variable Resistor	10K ohms
R69	ERJ3GEYJ562	Carbon	5.6K ohms 1/16W	C1,2	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R70	ERJ3GEYJ101	Carbon	100 ohms 1/16W	C3	YW5CH150J5VB	Ceramic	15 pF
R71	ERJ3GEYJ182	Carbon	1.8K ohms 1/16W	C4	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R72	ERJ3GEYJ752	Carbon	7.5K ohms 1/16W	C5	YW5X122K5VB	Ceramic	1200 pF
R73	ERJ3GEYJ303	Carbon	30K ohms 1/16W	C6	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R74	ERJ3GEY0R00	Carbon	0 ohms 1/16W	C8,9	YW5CH331J5VB	Ceramic	330 pF
R75	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W	C10	YW5K1C106KRC	Electrolytic	10 $\mu$ F 16V
R77	ERJ3GEYJ104	Carbon	100K ohms 1/16W	C12	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R78,79	ERJ3GEYJ103	Carbon	10K ohms 1/16W	C13	YW5X103K2VB	Ceramic	0.01 $\mu$ F

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
C14	YW5CH331J5VB	Ceramic 330 pF	<b>POWER BOARD</b>		
C15	YWSK1C106KRC	Electrolytic 10 $\mu$ F 16V	PCB6 (RTL)	YWVKB550P4A	Printed Circuit Board Assy
C16	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	IC1,2	YWMB3782PF	IC
C17	YWSK1C105KRA	Electrolytic 1 $\mu$ F 16V	IC3	YWNJM2902N	IC
C18	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	Q3	2SD1819-QRS	Transistor
C19	SK21C225KRA	Electrolytic 2.2 $\mu$ F 16V	Q4	2SB1218-QRS	Transistor
C20	YW5X103K2VB	Ceramic 0.01 $\mu$ F	Q5	2SJ128	Transistor
C21	SK21C225KRA	Electrolytic 2.2 $\mu$ F 16V	Q6	2SD1819-QRS	Transistor
C22	YW5CH201J5VB	Ceramic 200 pF	Q7	2SB1218-QRS	Transistor
C23	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	Q8	2SJ132	FET
C24	YW5CH201J5VB	Ceramic 200 pF	Q9	2SA1615-LK	Transistor
C25	YW5CH060D5VB	Ceramic 6 pF	Q10,11	2SD1819-QRS	Transistor
C26,27	YW5CH121J5VB	Ceramic 120 pF	Q12	2SB1218-QRS	Transistor
C29,30	YWSK1C106KRC	Electrolytic 10 $\mu$ F 16V	Q13	2SJ132	FET
C31	ECEV1EV4R7	Electrolytic 4.7 $\mu$ F 25V	Q14	2SA1615-LK	Transistor
C32	YW5X102K5VB	Ceramic 1000 pF	Q15	2SD1819-QRS	Transistor
C33	SK31A475KRA	Electrolytic 4.7 $\mu$ F 10V	Q16	2SJ132	FET
C34,37	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	Q17,18	2SD1819-QRS	Transistor
C38,39	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	Q19	2SB1218-QRS	Transistor
C40	ECEVOJN100S	Electrolytic 10 $\mu$ F 6.3V	Q20	2SJ128	Transistor
C41	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	Q21	2SD1819-QRS	Transistor
C42	ECEVOJV330	Electrolytic 33 $\mu$ F 6.3V	Q22	2SB1218-QRS	Transistor
C43,44	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	Q23-25	2SJ132	FET
C45,47	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	Q26	2SA1615-LK	Transistor
C49	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	Q27	2SD1819-QRS	Transistor
C50	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	Q28	2SB1218-QRS	Transistor
C51	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	Q29	2SC3074Y	Transistor
C52	ECEV1CV100	Electrolytic 10 $\mu$ F 16V	Q30	2SA1615-LK	Transistor
C53	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	Q31	2SD1819-QRS	Transistor
C56	YW5CH150J5VB	Ceramic 15 pF	Q39	2SA1615-LK	Transistor
C74	YWSK1C105KRA	Electrolytic 1 $\mu$ F 16V	D1-6	YWSC80204R	Diode
C75	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	D8,9	YWSC80204R	Diode
C76	YW5X102K5VB	Ceramic 1000 pF	R1	YWR0816R104D	Metal 100K ohms 1/16W
C77-81	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	R2	YWR0816R363D	Metal 36K ohms 1/16W
C82	YW5CH150J5VB	Ceramic 15 pF	R3	YWR0816R104D	Metal 100K ohms 1/16W
L1	EIC4EJ003E	Coil	R4	YWR0816R623D	Metal 62K ohms 1/16W
L2,4	ELJFC8R2MF	Coil	R5	YWR0816R104D	Metal 100K ohms 1/16W
L5,6	YWBMLM21B03PB	Coil	R6	YWR0816P303D	Metal 30K ohms 1/16W
X1	YWDX17R734	Crystal Oscillator	R7	YWR0816R104D	Metal 100K ohms 1/16W
X2	YWDX14R187	Crystal Oscillator	R8	YWR0816R473D	Metal 47K ohms 1/16W
CF1	YWNL4532S4R4	Filter	R9	YWR0816R104D	Metal 100K ohms 1/16W
CN1-3	YW51763132	Connector	R10	YWR0816R563D	Metal 56K ohms 1/16W
TP1-6	YWRCT2125TPV	Test- Pin	R11	YWR0816R104D	Metal 100K ohms 1/16W
TP8,10	YWRCT2125TPV	Test- Pin	R12	YWR0816R563D	Metal 56K ohms 1/16W
			R13	YWR0816P332D	Metal 3.3K ohms 1/16W
			R14	YWR0816P362D	Metal 3.6K ohms 1/16W
			R23,24	ERJ3GEYJ103	Carbon 10K ohms 1/16W
			R25	ERJ3GEYJ511	Carbon 510 ohms 1/16W
			R26-31	ERJ3GEYJ103	Carbon 10K ohms 1/16W
			R32	YWR0816P682D	Metal 6.8K ohms 1/16W
			R33-37	ERJ3GEYJ103	Carbon 10K ohms 1/16W
			R38	ERJ3GEYJ470	Carbon 47 ohms 1/16W



REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R39	YWR0816R513D	Metal	51K ohms 1/16W	C3,4	YW5X103K2VB	Ceramic	0.01 $\mu$ F
R40	YWR0816P203D	Metal	20K ohms 1/16W	C5	YW5F473Z2VB	Ceramic	0.047 $\mu$ F
R41	ERJ3GEYJ103	Carbon	10K ohms 1/16W	C6	YW5X103K2VB	Ceramic	0.01 $\mu$ F
R42	ERJ3GEYJ470	Carbon	47 ohms 1/16W	C7	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R43,44	YWR0816P243D	Metal	24K ohms 1/16W	C9	YW5F683Z2VB	Ceramic	0.068 $\mu$ F
R45	YWR0816P103D	Metal	10K ohms 1/16W	C10	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R46	ERJ3GEYJ101	Carbon	100 ohms 1/16W	C11,12	YW5F683Z2VB	Ceramic	0.068 $\mu$ F
R47	ERJ3GEYJ102	Carbon	1K ohms 1/16W	C13	YW400102CHJT	Ceramic	1000 pF
R48	YWR0816R433D	Metal	43K ohms 1/16W	C14	YW5F683Z2VB	Ceramic	0.068 $\mu$ F
R49	YWR0816P153D	Metal	15K ohms 1/16W	C15	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R50	YWR0816P123D	Metal	12K ohms 1/16W	C16,17	YW5F683Z2VB	Ceramic	0.068 $\mu$ F
R51	ERJ3GEYJ103	Carbon	10K ohms 1/16W	C18	YW16SA68M	Electrolytic	68 $\mu$ F 16V
R52	ERJ3GEYJ470	Carbon	47 ohms 1/16W	C19	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R53,54	YWR0816P333D	Metal	33K ohms 1/16W	C20	YW16SA33M	Electrolytic	33 $\mu$ F 16V
R55	YWR0816P103D	Metal	10K ohms 1/16W	C21	YW20SA68M	Electrolytic	68 $\mu$ F 20V
R56	ERJ3GEYJ101	Carbon	100 ohms 1/16W	C22	YW20SA100M	Electrolytic	100 $\mu$ F 20V
R57	YWR0816R473D	Metal	47K ohms 1/16W	C23	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R58	YWR0816P333D	Metal	33K ohms 1/16W	C24	YW16SA100M	Electrolytic	100 $\mu$ F 16V
R59	YWR0816P123D	Metal	12K ohms 1/16W	C25	YW5X103K2VB	Ceramic	0.01 $\mu$ F
R60	ERJ3GEYJ473	Carbon	47K ohms 1/16W	C26	ECA1AFQ331	Electrolytic	330 $\mu$ F 10V
R61	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W	C27	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R62	ERJ3GEYJ103	Carbon	10K ohms 1/16W	C28	YW16SA100M	Electrolytic	100 $\mu$ F 16V
R63	ERJ3GEYJ470	Carbon	47 ohms 1/16W	C29	YW5X103K2VB	Ceramic	0.01 $\mu$ F
R64	YWR0816P243D	Metal	24K ohms 1/16W	C30	ECA1AFQ181	Electrolytic	180 $\mu$ F 10V
R65	ERJ3GEY0R00	Carbon	0 ohms 1/16W	C31	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R66	YWR0816P153D	Metal	15K ohms 1/16W	C32	UPQ1A331MGH	Electrolytic	330 $\mu$ F 10V
R67	ERJ3GEYJ103	Carbon	10K ohms 1/16W	C33	YW10SA33M	Electrolytic	33 $\mu$ F 10V
R68-70	ERJ3GEYJ470	Carbon	47 ohms 1/16W	C34	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R71	YWR0816R683D	Metal	68K ohms 1/16W	C35	YW10SA100M	Electrolytic	100 $\mu$ F 10V
R72	YWR0816P203D	Metal	20K ohms 1/16W	C36	YW5X103K2VB	Ceramic	0.01 $\mu$ F
R73	ERJ3GEYJ101	Carbon	100 ohms 1/16W	C37	ECA0JFQ471	Electrolytic	470 $\mu$ F 6.3V
R74	YWR0816P103D	Metal	10K ohms 1/16W	C38	UPQ1V101MGH	Electrolytic	100 $\mu$ F 35V
R75	YWR0816P302D	Metal	3K ohms 1/16W	C39	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R76	YWR0816P103D	Metal	10K ohms 1/16W	C40	UPQ1V101MGH	Electrolytic	100 $\mu$ F 35V
R77	YWR0816P302D	Metal	3K ohms 1/16W	C41	ECA1VFQ560	Electrolytic	56 $\mu$ F 35V
R78	ERJ3GEYJ471	Carbon	470 ohms 1/16W	C42	YW5X103K2VB	Ceramic	0.01 $\mu$ F
R79	ERJ3GEYJ680	Carbon	68 ohms 1/16W	C43	ECA0JFQ681	Electrolytic	680 $\mu$ F 6.3V
R80	ERJ3GEY0R00	Carbon	0 ohms 1/16W	C46	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R81	YWR0816R683D	Metal	68K ohms 1/16W	C48	YW5CH200J5VB	Ceramic	20 pF
R82	YWR0816P432D	Metal	4.3K ohms 1/16W	L1	S100434182K	Coil	
R83	ERJ3GEYJ101	Carbon	100 ohms 1/16W	L2	YWS100529220	Coil	22 $\mu$ H
R84	YWR0816P103D	Metal	10K ohms 1/16W	L3	YWS100518220	Coil	22 $\mu$ H
R85	YWR0816P302D	Metal	3K ohms 1/16W	L4	S100434560K	Coil	56 $\mu$ H
R103	ERJ3GEYJ103	Carbon	10K ohms 1/16W	L5	S100434391K	Coil	390 $\mu$ H
R106	ERJ3GEYJ102	Carbon	1K ohms 1/16W	L6	S100434181K	Coil	180 $\mu$ H
R107	ERJ3GEYJ202	Carbon	2K ohms 1/16W	L7	YWS100518220	Coil	
R116	ERJ3GEYJ331	Carbon	330 ohms 1/16W	L8	YFLH10D500K	Coil	50 $\mu$ H
R120,121	ERJ3GEY0R00	Carbon	0 ohms 1/16W	L9	S100434561K	Coil	560 $\mu$ H
VR1	YWRH03AVAJ2W	Variable Resistor	220 ohms	L10	YWS100529220	Coil	
VR2	YWRH03AVAJ3W	Variable Resistor	2.2K ohms	L11-13	YWBML21B03PB	Coil	
C1	YW5X103K2VB	Ceramic	0.01 $\mu$ F	CN1,2	YW51756394	24-pin Connector Test- Pin Bracket	
C2	YW5F473Z2VB	Ceramic	0.047 $\mu$ F	TP1-3	YWRCT2125TPV		
				M19	YVW6FA0166A4		

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
<b>REAR BOARD</b>					
PCB7 (RTL)	YWVKCE550P4A	Printed Circuit Board Assy	SW2-4	YWSKHHP	Push Switch
IC1	YWUPD4053BG	IC	SW5	YWSSS222AN	Slide Switch
IC2	YWUPD74HC08G	IC	CF1-3	NFM6130T472B	Filter
IC5	NJM4556M	IC	CN1-3	YW51746434	24 pin Connector
IC6	NJM2903M	IC	CN4	10A10TR12SB	12-pin Connector
IC7	YWUPD4050BG	IC			
IC8	YWTC4S11F	IC	CN5	10A13TR20PB	20-pin Connector
IC9,10	YWTC4S584FR	IC	CN6	YWSDEB9505	9-pin Connector
IC11,12	YWTC4S69F	IC	CN7	YWPCRE28MD	28-pin Connector
IC13	YWTC4W53FL	IC	CN8	HR10A10R12PB	12-pin Connector
Q1	IMZ1T9	Transistor	CN9	YWHR10A7R4PB	4-pin Connector
D1	LN277RPX	LED			
D2	MA143	Diode	CN10-12	YWBNCDRD	BNC Connector
D3	MA141K	Diode	F1	YWSSFC1R6AT4	Current Fuse 1.6A
D4	MA143	Diode	E1	YWHDLNA	Fuse Holder
D5-7	YWERB83004	Diode	M22	YVV6FA0167A2	Bracket for Earth
			M23	YWA2NE0257A4	Spacer
D8,9	MA143	Diode			
R1	ERJ3GEYJ751	Carbon	<b>PRE PROCESS BOARD</b>		
R2,3	ERJ3GEYJ473	Carbon	PCB8 (RTL)	YWVKZE550P2A	Printed Circuit Board Assy
R4	ERJ3GEYJ101	Carbon	IC1	YWUPD4050BG	IC
R5,6	YWR0816P222D	Metal	IC3	NJM2902M	IC
			IC5	NJM2904M	IC
R7	ERJ3GEYJ510	Carbon	IC6	YWUPC4064G2	IC
R8	YWR0816R513D	Metal	IC7	YWTC4W53FL	IC
R9	ERJ3GEYJ101	Carbon	IC8	NJM2902M	IC
R10	ERJ3GEYJ104	Carbon	IC101	NJM2904M	IC
R11	ERJ3GEYJ102	Carbon	IC102	YWUPD4053BG	IC
			IC103	NJM3414M	IC
R12	ERJ3GEYJ473	Carbon	IC104,105	YWTC4W53FL	IC
R13,14	ERJ3GEYJ221	Carbon	IC106,201	NJM2904M	IC
R15,16	ERJ3GEYJ472	Carbon	IC202	YWUPD4053BG	IC
R17-24	ERJ3GEYJ104	Carbon	IC203	NJM3414M	IC
R25,26	ERJ3GEYJ750	Carbon	IC204,205	YWTC4W53FL	IC
R27-31	ERJ3GEYJ680	Carbon	IC206,301	NJM2904M	IC
R32	ERJ3GEYJ100	Carbon	IC302	YWUPD4053BG	IC
R33	ERJ3GEYJ221	Carbon	IC303	NJM3414M	IC
R34	ERJ3GEYJ680	Carbon	IC304,305	YWTC4W53FL	IC
R35	ERJ3GEYJ221	Carbon	IC306	NJM2904M	IC
R36-38	ERJ3GEYJ680	Carbon	Q1	2SB766-RS	Transistor
R40,41	ERJ3GEYJ221	Carbon	Q2	2SD874A-RS	Transistor
R42	ERJ3GEYJ680	Carbon	Q3	2SB766-RS	Transistor
C1	ECEA0JKG470	Electrolytic	Q4-6	2SB1218-QRS	Transistor
C2	YW5CH101J5VB	Ceramic	Q7,8	2SD1819-QRS	Transistor
C3	YW5F104Z2VB	Ceramic	Q9	2SB1218-QRS	Transistor
C4	ECEA1AKG220	Electrolytic	Q10-13	2SD1819-QRS	Transistor
C5	YW5X102K5VB	Ceramic	Q14	2SB1218-QRS	Transistor
C6	ECEA0JKG470	Electrolytic	Q15-19	2SD1819-QRS	Transistor
C7	YW5CH101J5VB	Ceramic	Q101-103	2SC3931-CD	Transistor
C8	ECEA0JKG470	Electrolytic			
C9-12	YW5F104Z2VB	Ceramic			
C13	ECEA1AKG220	Electrolytic			
L1	YWNL32330J	Coil			
SW1	YWSKHHQN	Push Switch			

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
Q104	2SK662-PQR	FET	R10	ERJ3GEYJ103	Carbon 10K ohms 1/16W
Q105	XN6534	Transistor	R11	ERJ3GEY0R00	Carbon 0 ohms 1/16W
Q106	XN6435	Transistor	R12	ERJ3GEYJ333	Carbon 33K ohms 1/16W
Q107	UMZ1	Transistor	R13	ERJ3GEYJ334	Carbon 330K ohms 1/16W
Q108	XN6435	Transistor	R14	ERJ3GEYJ224	Carbon 220K ohms 1/16W
Q110	2SC3931-CD	Transistor	R16	ERJ3GEYJ103	Carbon 10K ohms 1/16W
Q111	2SK662-PQR	FET	R17	ERJ3GEYJ102	Carbon 1K ohms 1/16W
Q112	UMZ1	Transistor	R18-22	YWR0816R473D	Metal 47K ohms 1/16W
Q113-124	2SA1532-CD	Transistor	R23	YWR0816R513D	Metal 51K ohms 1/16W
Q125	2SC3931-CD	Transistor	R24	YWR0816R473D	Metal 47K ohms 1/16W
Q126	XN6435	Transistor	R25	YWR0816R363D	Metal 36K ohms 1/16W
Q127	2SK662-PQR	FET	R26	ERJ3GEYJ102	Carbon 1K ohms 1/16W
Q128,201	2SC3931-CD	Transistor	R27,28	ERJ3GEYJ101	Carbon 100 ohms 1/16W
Q202,203	2SC3931-CD	Transistor	R29	ERJ3GEYJ102	Carbon 1K ohms 1/16W
Q204	2SK662-PQR	FET	R30-32	YWR0816R473D	Metal 47K ohms 1/16W
Q205	XN6534	Transistor	R33	YWR0816R623D	Metal 62K ohms 1/16W
Q206	XN6435	Transistor	R34	ERJ3GEYJ102	Carbon 1K ohms 1/16W
Q207	UMZ1	Transistor	R35	ERJ3GEYJ101	Carbon 100 ohms 1/16W
Q208	XN6435	Transistor	R36	YWR0816P103D	Metal 10K ohms 1/16W
Q210	2SC3931-CD	Transistor	R37	YWR0816P132D	Metal 1.3K ohms 1/16W
Q211	2SK662-PQR	FET	R38	ERJ3GEYJ102	Carbon 1K ohms 1/16W
Q212	UMZ1	Transistor	R39	ERJ3GEYJ332	Carbon 3.3K ohms 1/16W
Q213-224	2SA1532-CD	Transistor	R40	YWR0816R473D	Metal 47K ohms 1/16W
Q225	2SC3931-CD	Transistor	R41	YWR0816R563D	Metal 56K ohms 1/16W
Q226	XN6435	Transistor	R42,43	ERJ3GEYJ102	Carbon 1K ohms 1/16W
Q227	2SK662-PQR	FET	R44	ERJ3GEYJ331	Carbon 330 ohms 1/16W
Q228,301	2SC3931-CD	Transistor	R45	ERJ3GEYJ682	Carbon 6.8K ohms 1/16W
Q302,303	2SC3931-CD	Transistor	R46	ERJ3GEYJ223	Carbon 22K ohms 1/16W
Q304	2SK662-PQR	FET	R47	ERJ3GEYJ473	Carbon 47K ohms 1/16W
Q305	XN6534	Transistor	R48	ERJ3GEYJ223	Carbon 22K ohms 1/16W
Q306	XN6435	Transistor	R49	ERJ3GEYJ473	Carbon 47K ohms 1/16W
Q307	UMZ1	Transistor	R50	ERJ3GEYJ103	Carbon 10K ohms 1/16W
Q308	XN6435	Transistor	R51,52	ERJ3GEYJ101	Carbon 100 ohms 1/16W
Q310	2SC3931-CD	Transistor	R53	ERJ3GEYJ222	Carbon 2.2K ohms 1/16W
Q311	2SK662-PQR	FET	R54,55	ERJ3GEYJ101	Carbon 100 ohms 1/16W
Q312	UMZ1	Transistor	R56,57	ERJ3GEYJ103	Carbon 10K ohms 1/16W
Q313-324	2SA1532-CD	Transistor	R58	ERJ3GEYJ223	Carbon 22K ohms 1/16W
Q325	2SC3931-CD	Transistor	R59	ERJ3GEYJ473	Carbon 47K ohms 1/16W
Q326	XN6435	Transistor	R60	ERJ3GEYJ223	Carbon 22K ohms 1/16W
Q327	2SK662-PQR	FET	R61	ERJ3GEYJ473	Carbon 47K ohms 1/16W
Q328	2SC3931-CD	Transistor	R62	ERJ3GEYJ682	Carbon 6.8K ohms 1/16W
D2,101	MA141K	Diode	R63,64	ERJ3GEYJ101	Carbon 100 ohms 1/16W
D102,201	MA141K	Diode	R65	ERJ3GEYJ103	Carbon 10K ohms 1/16W
D301,302	MA141K	Diode	R66,67	ERJ3GEYJ101	Carbon 100 ohms 1/16W
D302	MA141A	Diode	R68,69	ERJ3GEYJ103	Carbon 10K ohms 1/16W
TH130,230	L311J101J332	Thermistor	R70	ERJ3GEYJ223	Carbon 22K ohms 1/16W
TH330	L311J101J332	Thermistor	R71	ERJ3GEYJ103	Carbon 10K ohms 1/16W
R1	ERJ3GEYJ334	Carbon 330K 1/16W	R72	ERJ3GEYJ223	Carbon 22K ohms 1/16W
R2	ERJ3GEYJ224	Carbon 220K ohms 1/16W	R73	ERJ3GEYJ103	Carbon 10K ohms 1/16W
R3	ERJ3GEYJ333	Carbon 33K ohms 1/16W	R74	ERJ3GEYJ223	Carbon 22K ohms 1/16W
R4	ERJ3GEY0R00	Carbon 0 ohms 1/16W	R75	ERJ3GEYJ103	Carbon 10K ohms 1/16W
R5	ERJ3GEYJ103	Carbon 10K ohms 1/16W	R76	ERJ3GEYJ223	Carbon 22K ohms 1/16W
R6	ERJ3GEYJ104	Carbon 100K ohms 1/16W	R77	ERJ3GEYJ103	Carbon 10K ohms 1/16W
R7	ERJ3GEYJ103	Carbon 10K ohms 1/16W	R78-81	ERJ3GEYJ223	Carbon 22K ohms 1/16W
R8	ERJ3GEYJ104	Carbon 100K ohms 1/16W	R82-93	ERJ3GEYJ473	Carbon 47K ohms 1/16W
R9	ERJ3GEYJ333	Carbon 33K ohms 1/16W			

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R94-96	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R163	YWR0816P272D	Metal	2.7K ohms 1/16W
R97	ERJ3GEYJ333	Carbon	33K ohms 1/16W	R164	YWR0816P301D	Metal	300 ohms 1/16W
R98	YWR0816P472D	Metal	4.7K ohms 1/16W	R165	YWR0816R683D	Metal	68K ohms 1/16W
R99	YWR0816P751D	Metal	750 ohms 1/16W	R166	YWR0816P223D	Metal	22K ohms 1/16W
R101	ERJ3GEYJ331	Carbon	330 ohms 1/16W	R167	YWR0816P103D	Metal	10K ohms 1/16W
R102	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R168	YWR0816P202D	Metal	2K ohms 1/16W
R103	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W	R169	YWR0816R683D	Metal	68K ohms 1/16W
R104,105	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W	R170	YWR0816P223D	Metal	22K ohms 1/16W
R106	YWR0816P101D	Metal	100 ohms 1/16W	R171,172	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R107	YWR0816P222D	Metal	2.2K ohms 1/16W	R173	YWR0816P202D	Metal	2K ohms 1/16W
R108	ERJ3GEYJ473	Carbon	47K ohms 1/16W	R174,175	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R109	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W	R176	YWR0816P182D	Metal	1.8K ohms 1/16W
R110	ERJ3GEYJ100	Carbon	10 ohms 1/16W	R177	YWR0816P471D	Metal	470 ohms 1/16W
R111,112	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R178	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R113	ERJ3GEYJ223	Carbon	22K ohms 1/16W	R179	YWR0816P471D	Metal	470 ohms 1/16W
R114	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R180	YWR0816P102D	Metal	1K ohms 1/16W
R115,116	ERJ3GEYJ473	Carbon	47K ohms 1/16W	R181	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R117,118	ERJ3GEYJ223	Carbon	22K ohms 1/16W	R182	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R119	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W	R183	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R120,121	YWR0816P101D	Metal	100 ohms 1/16W	R184	YWR0816P152D	Metal	1.5K ohms 1/16W
R122	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R185	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R123	YWR0816P152D	Metal	1.5K ohms 1/16W	R186	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R124	YWR0816P102D	Metal	1K ohms 1/16W	R187	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R125	YWR0816P152D	Metal	1.5K ohms 1/16W	R188	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W
R126	ERJ3GEY0R00	Carbon	0 ohms 1/16W	R189	ERJ3GEYJ471	Carbon	470 ohms 1/16W
R127	YWR0816P822D	Metal	8.2K ohms 1/16W	R190	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R128	YWR0816R473D	Metal	47K ohms 1/16W	R191	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R129	YWR0816P103D	Metal	10K ohms 1/16W	R201	ERJ3GEYJ331	Carbon	330 ohms 1/16W
R131	YWR0816P752D	Metal	7.5K ohms 1/16W	R202	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R132,133	YWR0816P203D	Metal	20K ohms 1/16W	R203	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R135	YWR0816P472D	Metal	4.7K ohms 1/16W	R204,205	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R136	YWR0816P203D	Metal	20K ohms 1/16W	R206	YWR0816P101D	Metal	100 ohms 1/16W
R137	YWR0816P103D	Metal	10K ohms 1/16W	R207	YWR0816P202D	Metal	2K ohms 1/16W
R139	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R208	ERJ3GEYJ473	Carbon	47K ohms 1/16W
R140	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W	R209	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R141,142	ERJ3GEYJ102	Carbon	1K ohms 1/16W	R210	ERJ3GEYJ100	Carbon	10 ohms 1/16W
R143,144	ERJ3GEYJ223	Carbon	22K ohms 1/16W	R211,212	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R145	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R213	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R146	ERJ3GEYJ104	Carbon	100K ohms 1/16W	R214	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R147	ERJ3GEYJ223	Carbon	22K ohms 1/16W	R215,216	ERJ3GEYJ473	Carbon	47K ohms 1/16W
R148	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W	R217,218	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R149	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R219	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R150	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W	R220,221	YWR0816P101D	Metal	100 ohms 1/16W
R151	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R222	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R152	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R223	YWR0816P152D	Metal	1.5K ohms 1/16W
R153	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R224	YWR0816P102D	Metal	1K ohms 1/16W
R154	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R225	YWR0816P152D	Metal	1.5K ohms 1/16W
R155	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R226	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R156	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R227	YWR0816P822D	Metal	8.2K ohms 1/16W
R157	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R228	YWR0816R473D	Metal	47K ohms 1/16W
R158	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R229	YWR0816P103D	Metal	10K ohms 1/16W
R159	YWR0816P222D	Metal	2.2K ohms 1/16W	R231	YWR0816P752D	Metal	7.5K ohms 1/16W
R160	YWR0816P331D	Metal	330 ohms 1/16W	R232,233	YWR0816P203D	Metal	20K ohms 1/16W
R161	YWR0816P103D	Metal	10K ohms 1/16W	R235	YWR0816P472D	Metal	4.7K ohms 1/16W
R162	YWR0816P223D	Metal	22K ohms 1/16W	R236	YWR0816P203D	Metal	20K ohms 1/16W


REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R237	YWR0816P103D	Metal	10K ohms 1/16W	R307	YWR0816P222D	Metal	2.2K ohms 1/16W
R238	YWR0816P203D	Metal	20K ohms 1/16W	R308	ERJ3GEYJ473	Carbon	47K ohms 1/16W
R239	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R309	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R240	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W	R310	ERJ3GEYJ100	Carbon	10 ohms 1/16W
R241,242	ERJ3GEYJ102	Carbon	1K ohms 1/16W	R311,312	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R243,244	ERJ3GEYJ223	Carbon	22K ohms 1/16W	R313	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R245	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R314	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R246	ERJ3GEYJ104	Carbon	100K ohms 1/16W	R315,316	ERJ3GEYJ473	Carbon	47K ohms 1/16W
R247	ERJ3GEYJ223	Carbon	22K ohms 1/16W	R317,318	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R248	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W	R319	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R249	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R320,321	YWR0816P101D	Metal	100 ohms 1/16W
R250	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W	R322	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R251	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R323	YWR0816P152D	Metal	1.5K ohms 1/16W
R252	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R324	YWR0816P102D	Metal	1K ohms 1/16W
R253	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R325	YWR0816P152D	Metal	1.5K ohms 1/16W
R254	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R326	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R255	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R327	YWR0816P822D	Metal	8.2K ohms 1/16W
R256	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R328	YWR0816R473D	Metal	47K ohms 1/16W
R257	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R329	YWR0816P103D	Metal	10K ohms 1/16W
R258	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R331	YWR0816P752D	Metal	7.5K ohms 1/16W
R259	YWR0816P222D	Metal	2.2K ohms 1/16W	R332,333	YWR0816P203D	Metal	20K ohms 1/16W
R260	YWR0816P331D	Metal	330 ohms 1/16W	R335	YWR0816P472D	Metal	4.7K ohms 1/16W
R261	YWR0816P103D	Metal	10K ohms 1/16W	R336	YWR0816P203D	Metal	20K ohms 1/16W
R262	YWR0816P223D	Metal	22K ohms 1/16W	R337	YWR0816P103D	Metal	10K ohms 1/16W
R263	YWR0816P272D	Metal	2.7K ohms 1/16W	R339	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R264	YWR0816P301D	Metal	300 ohms 1/16W	R340	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R265	YWR0816R683D	Metal	68K ohms 1/16W	R341,342	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R266	YWR0816P223D	Metal	22K ohms 1/16W	R343,344	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R267	YWR0816P103D	Metal	10K ohms 1/16W	R345	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R268	YWR0816P202D	Metal	2K ohms 1/16W	R346	ERJ3GEYJ104	Carbon	100K ohms 1/16W
R269	YWR0816R683D	Metal	68K ohms 1/16W	R347	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R270	YWR0816P223D	Metal	22K ohms 1/16W	R348	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R271,272	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R349	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R273	YWR0816P202D	Metal	2K ohms 1/16W	R350	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R274,275	ERJ3GEYJ153	Carbon	15K ohms 1/16W	R351	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R276	YWR0816P182D	Metal	1.8K ohms 1/16W	R352	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R277	YWR0816P471D	Metal	470 ohms 1/16W	R353	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R278	ERJ3GEYJ223	Carbon	22K ohms 1/16W	R354	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R279	YWR0816P471D	Metal	470 ohms 1/16W	R355	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R280	YWR0816P102D	Metal	1K ohms 1/16W	R356	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R281	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R357	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R282	ERJ3GEYJ223	Carbon	22K ohms 1/16W	R358	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R283	ERJ3GEYJ101	Carbon	100 ohms 1/16W	R359	YWR0816P222D	Metal	2.2K ohms 1/16W
R284	YWR0816P152D	Metal	1.5K ohms 1/16W	R360	YWR0816P331D	Metal	330 ohms 1/16W
R285	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W	R361	YWR0816P103D	Metal	10K ohms 1/16W
R286	ERJ3GEYJ102	Carbon	1K ohms 1/16W	R362	YWR0816P223D	Metal	22K ohms 1/16W
R287	ERJ3GEY0R00	Carbon	0 ohms 1/16W	R363	YWR0816P272D	Metal	2.7K ohms 1/16W
R288	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W	R364	YWR0816P301D	Metal	300 ohms 1/16W
R289	ERJ3GEYJ471	Carbon	470 ohms 1/16W	R365	YWR0816R683D	Metal	68K ohms 1/16W
R290	ERJ3GEYJ102	Carbon	1K ohms 1/16W	R366	YWR0816P223D	Metal	22K ohms 1/16W
R301	ERJ3GEYJ331	Carbon	330 ohms 1/16W	R367	YWR0816P103D	Metal	10K ohms 1/16W
R302	ERJ3GEYJ103	Carbon	10K ohms 1/16W	R368	YWR0816P202D	Metal	2K ohms 1/16W
R303	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W	R369	YWR0816R683D	Metal	68K ohms 1/16W
R304,305	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W	R370	YWR0816P223D	Metal	22K ohms 1/16W
R306	YWR0816P101D	Metal	100 ohms 1/16W	R371,372	ERJ3GEYJ101	Carbon	100 ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R373	YWR0816P202D	Metal	2K ohms 1/16W	C17	YW5CH101J5VB	Ceramic	100 pF
R374,375	ERJ3GEYJ153	Carbon	15K ohms 1/16W	C18	YW5X103K2VB	Ceramic	0.01 $\mu$ F
R376	YWR0816P182D	Metal	1.8K ohms 1/16W	C19	YWSK1C105KRA	Electrolytic	1 $\mu$ F 16V
R377	YWR0816P471D	Metal	470 ohms 1/16W	C20	YW5X103K2VB	Ceramic	0.01 $\mu$ F
R378	ERJ3GEYJ223	Carbon	22K ohms 1/16W	C21-24	ECEV1CV100	Electrolytic	10 $\mu$ F 16V
R379	YWR0816P471D	Metal	470 ohms 1/16W	C25-30	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R380	YWR0816P102D	Metal	1K ohms 1/16W	C31	SK31A106KRB	Electrolytic	10 $\mu$ F 10V
R381	ERJ3GEYJ101	Carbon	100 ohms 1/16W	C101	ECEV1CV100	Electrolytic	10 $\mu$ F 16V
R382	ERJ3GEYJ223	Carbon	22K ohms 1/16W	C102	YWSK1C106KRC	Electrolytic	10 $\mu$ F 16V
R383	ERJ3GEYJ101	Carbon	100 ohms 1/16W	C103	YW5CH150J5VB	Ceramic	15 pF
R384	YWR0816P152D	Metal	1.5K ohms 1/16W	C104	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R385	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W	C105	YW5CH030D5VB	Ceramic	3 pF
R386	ERJ3GEYJ102	Carbon	1K ohms 1/16W	C107	YW5CH020D5VB	Ceramic	2 pF
R387	ERJ3GEYOR00	Carbon	0 ohms 1/16W	C108	ECEV1CN100	Electrolytic	10 $\mu$ F 16V
R388	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W	C109,110	ECEV1HN010SR	Electrolytic	10 $\mu$ F 50V
R389	ERJ3GEYJ471	Carbon	470 ohms 1/16W	C111,114	ECEV1CV100	Electrolytic	10 $\mu$ F 16V
R390	ERJ3GEYJ102	Carbon	1K ohms 1/16W	C115	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R391	ERJ3GEYJ103	Carbon	10K ohms 1/16W	C116	YW5CH471J5VB	Ceramic	470 pF
R400	YWR0816P102D	Metal	1K ohms 1/16W	C117	YW5CH030D5VB	Ceramic	3 pF
R401	YWR0816P121D	Metal	120 ohms 1/16W	C118	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R402	YWR0816P331D	Metal	330 ohms 1/16W	C119	ECEV0GV101S	Electrolytic	100 $\mu$ F 4V
R403	YWR0816Q470D	Metal	47 ohms 1/16W	C120	YWSK1C106KRC	Electrolytic	10 $\mu$ F 16V
R404	YWR0816P181D	Metal	180 ohms 1/16W	C124	ECEV1CV100	Electrolytic	10 $\mu$ F 16V
R405	YWR0816Q470D	Metal	47 ohms 1/16W	C125	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
R406	YWR0816P101D	Metal	100 ohms 1/16W	C126,127	ECEV1CV100	Electrolytic	10 $\mu$ F 16V
R407	YWR0816Q150D	Metal	15 ohms 1/16W	C128	YW5X103K2VB	Ceramic	0.01 $\mu$ F
VR1-14	EVM7JGA30B54	Variable Resistor	50K ohms	C130,132	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
VR101	EVM7JGA30B53	Variable Resistor	5K ohms	C133-135	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
VR102-104	EVM7JGA30B15	Variable Resistor	100K ohms	C136	SK21D106KRC	Electrolytic	10 $\mu$ F 16V
VR105	EVM7JGA30B14	Variable Resistor	10K ohms	C137	ECEV1CV100	Electrolytic	10 $\mu$ F 16V
VR106,107	EVM7JGA30B15	Variable Resistor	100K ohms	C140	YW5CH270J5VB	Ceramic	27 pF
VR108-110	EVM7JGA30B13	Variable Resistor	1K ohms	C141	YW5X103K2VB	Ceramic	0.01 $\mu$ F
VR111	EVM7JGA30B24	Variable Resistor	20K ohms	C143	ECEV1CV100	Electrolytic	10 $\mu$ F 16V
VR201	EVM7JGA30B14	Variable Resistor	10K ohms	C144	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
VR202-204	EVM7JGA30B15	Variable Resistor	100K ohms	C145	ECEV1CV100	Electrolytic	10 $\mu$ F 16V
VR205	EVM7JGA30B14	Variable Resistor	10K ohms	C146,147	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
VR206,207	EVM7JGA30B15	Variable Resistor	100K ohms	C148	YW5CH050D5VB	Ceramic	5 pF
VR208-210	EVM7JGA30B13	Variable Resistor	1K ohms	C149	ECEV1CV470	Electrolytic	47 $\mu$ F 16V
VR301	EVM7JGA30B23	Variable Resistor	2K ohms	C201	ECEV1CV100	Electrolytic	10 $\mu$ F 16V
VR302-304	EVM7JGA30B15	Variable Resistor	100K ohms	C202	YWSK1C106KRC	Electrolytic	10 $\mu$ F 16V
VR305	EVM7JGA30B14	Variable Resistor	10K ohms	C203	YW5CH150J5VB	Ceramic	15 pF
VR306,307	EVM7JGA30B15	Variable Resistor	100K ohms	C204	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
VR308-310	EVM7JGA30B13	Variable Resistor	1K ohms	C207	YW5CH050D5VB	Ceramic	5 pF
VR311	EVM7JGA30B24	Variable Resistor	20K ohms	C208	ECEV1CN100	Electrolytic	10 $\mu$ F 16V
C1	ECEV1HN010SR	Electrolytic	1 $\mu$ F 50V	C209,210	ECEV1HN010SR	Electrolytic	1 $\mu$ F 50V
C3	YW5CH151J5VB	Ceramic	150 pF	C211,214	ECEV1CV100	Electrolytic	10 $\mu$ F 16V
C7	YW5X103K2VB	Ceramic	0.01 $\mu$ F	C215	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
C8,9	ECEV1CV100	Electrolytic	10 $\mu$ F 16V	C216	YW5CH471J5VB	Ceramic	470 pF
C10	ECEV1CV470	Electrolytic	47 $\mu$ F 16V	C217	YW5CH030D5VB	Ceramic	3 pF
C11	ECEV1CV100	Electrolytic	10 $\mu$ F 16V	C218	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
C12	ECEV0JV101	Electrolytic	100 $\mu$ F 6.3V	C219	ECEV0GV101S	Electrolytic	100 $\mu$ F 4V
C13	SK21C336KRD0	Electrolytic	33 $\mu$ F 16V	C220	YWSK1C106KRC	Electrolytic	10 $\mu$ F 16V
C14	ECEV0JV101	Electrolytic	100 $\mu$ F 6.3V	C224	ECEV1CV100	Electrolytic	10 $\mu$ F 16V
C15	SK21A476KRD0	Electrolytic	47 $\mu$ F 10V	C225	YW5F104Z2VB	Ceramic	0.1 $\mu$ F
C16	ECEV1CV100	Electrolytic	10 $\mu$ F 16V	C226,227	ECEV1CV100	Electrolytic	10 $\mu$ F 16V

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
C228	YW5X103K2VB	Ceramic	0.01 μF	MOTHER BOARD			
C230,232	YW5F104Z2VB	Ceramic	0.1 μF				
C233-235	YW5F104Z2VB	Ceramic	0.1 μF				
C236	SK21D106KRC	Electrolytic	10 μF 16V				
C237	ECEV1CV100	Electrolytic	10 μF 16V	PCB9 (RTL)	YWVKBE550P2A	Printed Circuit Board Assy	
C240	YW5CH270J5VB	Ceramic	27 pF	IC1	YWUPD4051BG	IC	
C241	YW5X103K2VB	Ceramic	0.01 μF	IC2	NJM2902M	IC	
C243	ECEV1CV100	Electrolytic	10 μF 16V	IC3,4	YWUPD4066BG	IC	
C244	YW5F104Z2VB	Ceramic	0.1 μF	IC5,6	YWTC4S66FR	IC	
C245	ECEV1CV100	Electrolytic	10 μF 16V	IC7	NJM2904M	IC	
C246,247	YW5F104Z2VB	Ceramic	0.1 μF	IC8	YWNJM2902N	IC	
C248	YW5CH050D5VB	Ceramic	5 pF	IC9	MC74HC4040F	IC	
C249	ECEV1CV470	Electrolytic	47 μF 16V	IC10	YWMC74HC10F	IC	
C301	ECEV1CV100	Electrolytic	10 μF 16V	IC11	YWMC74HC74AF	IC	
C302	YW5K1C106KRC	Electrolytic	10 μF 16V	Q1	2SD1819-QRS	Transistor	
C303	YW5CH150J5VB	Ceramic	15 pF	Q2	2SB1218A-QR	Transistor	
C304	YW5F104Z2VB	Ceramic	0.1 μF	Q3-12	2SD1819-QRS	Transistor	
C305	YW5CH030D5VB	Ceramic	3 pF	Q16	2SB1218A-QR	Transistor	
C307	YW5CH020D5VB	Ceramic	2 pF	Q17,18	2SD1819-QRS	Transistor	
C308	ECEV1CN100	Electrolytic	10 μF 16V	Q19	2SB1218A-QR	Transistor	
C309,310	ECEV1HN010SR	Electrolytic	1 μF 50V	Q20	2SD874A-RS	Transistor	
C311,314	ECEV1CV100	Electrolytic	10 μF 16V	Q21	2SB1218A-QR	Transistor	
C315	YW5F104Z2VB	Ceramic	0.1 μF	Q22	2SB766A-QR	Transistor	
C316	YW5CH471J5VB	Ceramic	470 pF	Q23	2SD1819-QRS	Transistor	
C317	YW5CH030D5VB	Ceramic	3 pF	Q24	2SB766A-QR	Transistor	
C318	YW5F104Z2VB	Ceramic	0.1 μF	Q25	2SD1819-QRS	Transistor	
C319	ECEV0GV101S	Electrolytic	100 μF 4V	Q26	2SB766A-QR	Transistor	
C320	YW5K1C106KRC	Electrolytic	10 μF 16V	Q27	2SD1819-QRS	Transistor	
C324	ECEV1CV100	Electrolytic	10 μF 16V	Q28	2SD1979	Transistor	
C325	YW5F104Z2VB	Ceramic	0.1 μF	Q29	2SB1218A-QR	Transistor	
C326,327	ECEV1CV100	Electrolytic	10 μF 16V	D1	MA5082	Diode	
C328	YW5X103K2VB	Ceramic	0.01 μF	D2	MA143	Diode	
C330,332	YW5F104Z2VB	Ceramic	0.1 μF	D6	MA159	Diode	
C333-335	YW5F104Z2VB	Ceramic	0.1 μF	R1-4	ERJ3GEYJ473	Carbon	47K ohms 1/16W
C336	SK21D106KRC	Electrolytic	10 μF 16V	R5	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
C337	ECEV1CV100	Electrolytic	10 μF 16V	R6	ERJ3GEYJ102	Carbon	1K ohms 1/16W
C340	YW5CH270J5VB	Ceramic	27 pF	R8	YWR0816P622D	Metal	6.2K ohms 1/16W
C341	YW5X103K2VB	Ceramic	0.01 μF	R9	YWR0816P103D	Metal	10K ohms 1/16W
C343	ECEV1CV100	Electrolytic	10 μF 16V	R10	YWR0816P562D	Metal	5.6K ohms 1/16W
C344	YW5F104Z2VB	Ceramic	0.1 μF	R11	ERJ3GEYJ102	Carbon	1K ohms 1/16W
C345	ECEV1CV100	Electrolytic	10 μF 16V	R12	YWR0816P183D	Metal	18K ohms 1/16W
C346,347	YW5F104Z2VB	Ceramic	0.1 μF	R13	YWR0816P432D	Metal	4.3K ohms 1/16W
C348	YW5CH050D5VB	Ceramic	5 pF	R14	YWR0816R363D	Metal	36K ohms 1/16W
C349	ECEV1CV470	Electrolytic	47 μF 16V	R15	YWR0816P153D	Metal	15K ohms 1/16W
CN1-3	YW51756394	Connector		R16	YWR0816P183D	Metal	18K ohms 1/16W
TP1,101	YWRCT2125TPV	Test- Pin		R17	YWR0816R363D	Metal	36K ohms 1/16W
TP102-106	YWRCT2125TPV	Test- Pin		R18-21	ERJ3GEYJ104	Carbon	100K ohms 1/16W
TP201-206	YWRCT2125TPV	Test- Pin		R22-29	ERJ3GEYJ473	Carbon	47K ohms 1/16W
TP301-306	YWRCT2125TPV	Test- Pin		R30-33	ERJ3GEYJ103	Carbon	10K ohms 1/16W
				R34	ERJ3GEYJ101	Carbon	100 ohms 1/16W
				R35	ERJ3GEYJ622	Carbon	6.2K ohms 1/16W
				R36	ERJ3GEYJ101	Carbon	100 ohms 1/16W
				R37	ERJ3GEYJ622	Carbon	6.2K ohms 1/16W
				R38-43	ERJ3GEYJ473	Carbon	47K ohms 1/16W
				R44	ERJ3GEYJ223	Carbon	22K ohms 1/16W



REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION		
R45-56	ERJ3GEYJ473	Carbon	47K ohms 1/16W	CN11-18	YW51756434	24-pin Connector		
R62-64	ERJ3GEYJ105	Carbon	1M ohms 1/16W	CN19-21	YW51756394	24-pin Connector		
R65,66	ERJ3GEYJ150	Carbon	15 ohms 1/16W	CN22	YW51756434	24-pin Connector		
R67	ERJ3GEYJ103	Carbon	10K ohms 1/16W	CN23	YW41756432	12-pin Connector		
R68	ERJ3GEYJ223	Carbon	22K ohms 1/16W	CN24	YW51756434	24-pin Connector		
R69	ERJ3GEYJ333	Carbon	33K ohms 1/16W	CN25	YW41756432	12-pin Connector		
R70,71	ERJ3GEYJ104	Carbon	100K ohms 1/16W	ACCESSORY PARTS/PACKAGING PARTS				
R72	YWR0816P183D	Metal	18K ohms 1/16W					
R73	YWR0816R334D	Metal	330K ohms 1/16W	CN100 M31 M32 M35	YVHR10A7P4S YVW8QA3257AN XZB26X40C05 YVW9CF2203AN	4-pin Connector Operating Instructions Polyethylene Bag Packaging Ass'y		
R74	ERJ3GEYJ331	Carbon	330 ohms 1/16W					
R75	ERJ3GEYJ102	Carbon	1K ohms 1/16W					
R76	YWR0816R124D	Metal	120K ohms 1/16W					
R77	YWR0816P303D	Metal	30K ohms 1/16W					
R78	ERJ3GEYJ331	Carbon	330 ohms 1/16W					
R79	ERJ3GEYJ102	Carbon	1K ohms 1/16W					
R80	YWR0816P203D	Metal	20K ohms 1/16W					
R81	YWR0816P303D	Metal	30K ohms 1/16W					
R86	ERJ3GEYJ331	Carbon	330 ohms 1/16W					
R87	ERJ3GEYJ102	Carbon	1K ohms 1/16W					
R88	YWR0816P302D	Metal	3K ohms 1/16W					
R89	YWR0816P183D	Metal	18K ohms 1/16W	EXTENTION BOARD (REFER TO PAGE 38)				
R90	YWR0816P223D	Metal	22K ohms 1/16W					
R91	YWR0816P303D	Metal	30K ohms 1/16W	EXB01 EXB02 EXB03 EXB04 EXB05  EXB06 EXB07 EXB08 EXB09	YVW0EA0287AN YVW0EA0288AN YVW0EA0289AN YVW0EA0290AN YVW0EA0291AN  YVW0EA0292AN YVW0EA0293AN YVW0EA0294AN YVW0EA0295AN	12P-24P Extention Board 24PX2 Extention Board 24P-X3 Extention Board Sensor/drive Extention Board Sensor/Pre AMP Extention Board  Mother/Rear Extention Board Encord/Sync Extention Board Syscon Extention Board Dita Extention Board		
R96	ERJ3GEYJ331	Carbon	330 ohms 1/16W					
R97	ERJ3GEYJ102	Carbon	1K ohms 1/16W					
R98	YWR0816P203D	Metal	20K ohms 1/16W					
R99	YWR0816R683D	Metal	68K ohms 1/16W					
R100	YWR0816P223D	Metal	22K ohms 1/16W					
R101	YWR0816R683D	Metal	68K ohms 1/16W					
C1	YW5F104Z2VB	Ceramic	0.1 µF					
C2	YW5CH101J5VB	Ceramic	100 pF					
C3	YWSK1C106KRC	Electrolytic	10 µF 16V					
C4-6	YW5F104Z2VB	Ceramic	0.1 µF					
C7	ECEV1CV470	Electrolytic	47 µF 16V					
C8-10	YW5F104Z2VB	Ceramic	0.1 µF					
C11	ECEV1EV330	Electrolytic	33 µF 25V	EXTENTION BOARD (REFER TO PAGE 38)				
C12	ECEV1CV470	Electrolytic	47 µF 16V					
C16-18	ECEV1HV3R3SR	Electrolytic	3.3 µF 50V	EXB01 EXB02 EXB03 EXB04 EXB05  EXB06 EXB07 EXB08 EXB09	YVW0EA0287AN YVW0EA0288AN YVW0EA0289AN YVW0EA0290AN YVW0EA0291AN  YVW0EA0292AN YVW0EA0293AN YVW0EA0294AN YVW0EA0295AN	12P-24P Extention Board 24PX2 Extention Board 24P-X3 Extention Board Sensor/drive Extention Board Sensor/Pre AMP Extention Board  Mother/Rear Extention Board Encord/Sync Extention Board Syscon Extention Board Dita Extention Board		
C19	YW5X103K2VB	Ceramic	0.01 µF					
C20	YW5X102K5VB	Ceramic	1000 pF					
C21,22	ECEV1EV330	Electrolytic	33 µF 25V					
C23	ECEV1VG330	Electrolytic	33 µF 35V					
C24,25	ECEV1EV330	Electrolytic	33 µF 25V					
C26,27	ECEV0JV101	Electrolytic	100 µF 6.3V					
C28	ECEV0JV220	Electrolytic	22 µF 6.3V					
C29	ECEV0JV101	Electrolytic	100 µF 6.3V					
C30	ECEV1CV470	Electrolytic	47 µF 16V					
C31	ECEV1CV100	Electrolytic	10 µF 16V					
C32	ECEV1CV470	Electrolytic	47 µF 16V					
C33	SK21C336KRD0	Electrolytic	33 µF 16V					
C34	YW5F104Z2VB	Ceramic	0.1 µF	EXTENTION BOARD (REFER TO PAGE 38)				
C40-42	NFM41R10C102	Bead						
C43	YW5F104Z2VB	Ceramic	0.1 µF	EXB06 EXB07 EXB08 EXB09	YVW0EA0292AN YVW0EA0293AN YVW0EA0294AN YVW0EA0295AN	Mother/Rear Extention Board Encord/Sync Extention Board Syscon Extention Board Dita Extention Board		
C44	YWSK1C106KRC	Electrolytic	10 µF 16V					
CN2-6	YW51756434	24-pin Connector						

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
<b>CAMERA ADAPTOR WV-PS550</b>			<b>AUDIO BOARD</b>		
<b>MISCELLANEOUS</b>			PCB3 (RTL)	YWVKDPS55P1A	Printed Circuit Board Assy
Q101	2SC3944-RS	Transistor	IC1	YWUPC4570G	IC
CN101	YWNP5D2V	S-Video Connector	IC2	NJM4560M	IC
CN102	YWNR	Connector	IC3	YW78L09UATE1	IC
M1	YWW5WA1593A3	Front Panel	IC4	YWTA7303P	IC
M2	YWW2KA0887A2	Front Chassis	IC5	NJM4556MB	IC
M3	YWW2KA0889B1	Main Chassis	IC6	NJM2903M	IC
M4	YWW2SA2655A4	Mounting Angle	IC7	YW78L09UATE1	IC
M5	YWW2KA0859A2	Side Chassis	Q1,2	2SD1819-QRS	Transistor
M6	YWCS1	Cord Clamp	Q3-5	2SC3931-CD	Transistor
M7	YWW2SA2656A4	Mounting Angle	Q6	2SB1219-QRS	Transistor
M8	YWW2PA0619A4	Insulator	Q7,8	2SD1819-QRS	Transistor
M9	YWW5EA1343B2	Upper Cover	Q9	2SC3938-QRS	Transistor
M10	YWW5EB1306B2	Bottom Cover	Q10	2SB1218-QRS	Transistor
M11	YWW5350WB01	Rubber Foot	Q12	2SK662-PQR	FET
M12	YWW5WA1594A2	Rear Panel	Q13	2SD1819-QRS	Transistor
M13	YWW2SA2654A4	Mounting Angle	D1	MA141K	Diode
M14	UAMS-05SV0	Cord Clamp	D2,3	YWRD2R0ESB1	Diode
M15	YWW2SA2657A4	Mounting Angle for Left Side	D4	MA338	Diode
M16	YWW2SA2658A4	Mounting Angle for Right Side	D5	MA182	Diode
M17	YWW2PA0618A4	Insulator	D6,7	MA141K	Diode
M18	YWW2SA2653A4	Mounting Angle	R1	YWR0816P103D	Metal 10K ohms 1/16W
M19	YWA1GA0001A4	Plasty-Rivet	R2	YWR0816P102D	Metal 1K ohms 1/16W
M21 	YWW7QA3239A4	Main Label	R3	YWR0816P103D	Metal 10K ohms 1/16W
M22	YWW7SA1838A4	Screw Caution Label	R4	ERJ3GEYJ392	Carbon 3.9K ohms 1/16W
M25	YWW7MA0338A4	Caution Label	R5	ERJ3GEYJ334	Carbon 330K ohms 1/16W
M26	YFV7MB0099A4	UL Caution Label	R6	YWR0816P273D	Metal 27K ohms 1/16W
<b>AUDIO MOTHER BOARD</b>			R7	YF2116751JT	Carbon 750 ohms 1/10W
PCB1 (RTL)	YWVKBPS55P1A	Printed Circuit Board Assy	R8	ERJ3GEYJ471	Carbon 470 ohms 1/16W
CN2	YW41768338	14-pin Connector	R9	ERJ3GEYJ822	Carbon 8.2K ohms 1/16W
<b>AUDIO CONNECTOR BOARD</b>			R10	ERJ3GEYJ163	Carbon 16K ohms 1/16W
PCB2 (RTL)	YWVKCPS55P1A	Printed Circuit Board Assy	R11	ERJ3GEYJ100	Carbon 10 ohms 1/16W
SW1	YW55SF042P6N	Slide Switch	R12	ERJ6GEY0R00	Carbon 1 ohms 1/10W
CN2	YW530140310	3-pin Connector	R13	ERJ3GEYJ222	Carbon 2.2K ohms 1/16W
JK3	YWT6525AABB	Jack	R14	ERJ3GEYJ123	Carbon 12K ohms 1/16W
M28	YWA2HA0197A4	Shield	R15	ERJ3GEYJ153	Carbon 15K ohms 1/16W
			R16	YWR0816P113D	Metal 11K ohms 1/16W
			R17	YWR0816P133D	Metal 13K ohms 1/16W
			R18	ERJ3GEYJ563	Carbon 56K ohms 1/16W
			R19	ERJ3GEYJ473	Carbon 47K ohms 1/16W
			R20	ERJ3GEYJ333	Carbon 33K ohms 1/16W
			R21	ERJ3GEYJ222	Carbon 2.2K ohms 1/16W
			R22	ERJ3GEYJ101	Carbon 100 ohms 1/16W
			R23	ERJ3GEYJ222	Carbon 2.2K ohms 1/16W
			R24,25	ERJ3GEYJ331	Carbon 330 ohms 1/16W
			R26,27	ERJ3GEYJ333	Carbon 33K ohms 1/16W
			R28	ERJ3GEYJ101	Carbon 100 ohms 1/16W
			R29	ERJ3GEYJ100	Carbon 10 ohms 1/16W
			R30	ERJ3GEYJ222	Carbon 2.2K ohms 1/16W
			R31	ERJ3GEYJ102	Carbon 1K ohms 1/16W
			R32	ERJ3GEYJ104	Carbon 100K ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R33,34	ERJ3GEYJ223	Carbon	22K ohms 1/16W	C30	YF400104FZT	Ceramic	0.1 $\mu$ F
R35	ERJ3GEYJ562	Carbon	5.6K ohms 1/16W	C31	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V
R36	ERJ3GEYJ123	Carbon	12K ohms 1/16W	C32,33	YF400104FZT	Ceramic	0.1 $\mu$ F
R37	ERJ3GEYJ103	Carbon	10K ohms 1/16W	C34	YW5CH050D5VB	Ceramic	5 pF
R38	ERJ3GEYJ102	Carbon	1K ohms 1/16W	C35	YW5X682K2VB	Ceramic	6800 pF
R39	ERJ3GEYJ331	Carbon	330 ohms 1/16W	C36	YW5X182K2VB	Ceramic	1800 pF
R40	ERJ3GEYJ101	Carbon	100 ohms 1/16W	C37	YW5X272K5VB	Ceramic	2700 pF
R41	ERJ3GEYJ331	Carbon	330 ohms 1/16W	C38	YF400104FZT	Ceramic	0.1 $\mu$ F
R43	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W	C39	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V
R44,45	ERJ3GEYJ752	Carbon	7.5K ohms 1/16W	C40	ECEA1AKN470	Electrolytic	47 $\mu$ F 10V
R50	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W	C42	ECEA1AKA220	Electrolytic	22 $\mu$ F 10V
R51,52	ERJ3GEYJ103	Carbon	10K ohms 1/16W	C43	YW5CH101J5VB	Ceramic	100 pF
R53	ERJ3GEYJ182	Carbon	1.8K ohms 1/16W	C44	YW5CH100J5VB	Ceramic	10 pF
R54	ERJ3GEYJ683	Carbon	68K ohms 1/16W	C45	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V
R55	ERJ3GEYJ103	Carbon	10K ohms 1/16W	C46	ECEA1HKA2R2	Electrolytic	2.2 $\mu$ F 50V
R56	ERJ3GEYJ221	Carbon	220 ohms 1/16W	C47	ECEA1HKAR47	Electrolytic	0.47 $\mu$ F 50V
R57	ERJ3GEYJ473	Carbon	47K ohms 1/16W	C48	YW5X103K2VB	Ceramic	0.01 $\mu$ F
R58	ERJ3GEYJ683	Carbon	68K ohms 1/16W	C49	YF400104FZT	Ceramic	0.1 $\mu$ F
R59	ERJ3GEYJ104	Carbon	100K ohms 1/16W	C50	ECSF1VE685	Tantalum	6.8 $\mu$ F 35V
R60	ERJ3GEYJ223	Carbon	22K ohms 1/16W	C51	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V
R61	ERJ3GEYJ103	Carbon	10K ohms 1/16W	C52	YF400104FZT	Ceramic	0.1 $\mu$ F
R62	ERJ3GEYJ105	Carbon	1M ohms 1/16W	C53	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V
R63	YWR0816P822D	Metal	8.2K ohms 1/16W	L1	YW5100S22391	Coil	390 $\mu$ H
R64	ERJ3GEYJ391	Carbon	390 ohms 1/16W	L2	YWTLC1441Z	Coil	
R65	ERJ3GEYJ105	Carbon	1M ohms 1/16W	L3	YWTLC1217Z	Coil	
R66	ERJ3GEYJ102	Carbon	1K ohms 1/16W	SW1,2	YWSSSS812B12	Slide Switch	
R67,68	ERJ3GEYJ104	Carbon	100K ohms 1/16W	CF1	YWE112S	Ceramic Filter	
R69	ERJ3GEY0R00	Carbon	0 ohms 1/16W	CF2-4	YWE117S	Ceramic Filter	
R70-74	ERJ6GEY0R00	Carbon	0 ohms 1/10W	CN1	YW41756398	14-pin Connector	
VR1	EVML3GA00B23	Variable Resistor	2 K ohms	TP1-4	YW32BM7R5	Test- Pin	
C1	ECEA1CKA100	Electrolytic	10 $\mu$ F 16V	M31	YWV2HA1118A4	Shield Parts	
C2	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V	M32	YWV2HA1119A4	Shield Parts	
C3	ECEA1CKN100	Electrolytic	10 $\mu$ F 16V	M33	YWV2HA1120A4	Shield Parts	
C4	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V	M34	YWV2HA1121A4	Shield Parts	
C5	YW5X102K5VB	Ceramic	1000 pF				
C6	ECEA1CKN100	Electrolytic	10 $\mu$ F 16V				
C7	YW5CH330J5VB	Ceramic	33 pF				
C8	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V				
C9,10	ECEA1CKN100	Electrolytic	10 $\mu$ F 16V				
C11	ECEA1AKA220	Electrolytic	22 $\mu$ F 10V				
C12	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V				
C13	YW5X472K5VB	Ceramic	4700 pF				
C14,15	YW5CH101J5VB	Ceramic	100 pF				
C16	YF400104FZT	Ceramic	0.1 $\mu$ F				
C17	YW5CH120J5VB	Ceramic	12 pF				
C18	YW5X102K5VB	Ceramic	1000 pF				
C19	YW5CH101J5VB	Ceramic	100 pF				
C20	YW400560THJ	Ceramic	56 pF				
C21	YF400104FZT	Ceramic	0.1 $\mu$ F				
C22,23	YW5X102K5VB	Ceramic	1000 pF				
C24	YF400104FZT	Ceramic	0.1 $\mu$ F				
C25	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V				
C26	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V				
C27,28	YW5CH200J5VB	Ceramic	20 pF				
C29	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V				

### INTERFACE BOARD

PCB4 (RTL)	YWVKEPS55P1A	Printed Circuit Board Assy
L1,2	YWBLO1RN1A62	Coil
CN1	YWPCRE36MD	36-pin Connector
CN2	YWPCRE28MD	28-pin Connector

### LED BOARD

PCB5 (RTL)	YWVKFPS55P1A	Printed Circuit Board Assy
D1	LN277RPX	LED
M36	YWA2NC0257A4	Spacer

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
<b>MOTHER BOARD</b>					
PCB6 (RTL)	YWVKYP55P1A	Printed Circuit Board Assy	Q6,7	2SA1022-C	Transistor
IC1	YWMC145407F	IC	Q8,9	2SD601-RS	Transistor
IC2	NJM2903M	IC	Q10	2SA1022-C	Transistor
D1	MA157	Diode	Q11	2SC2404-CD	Transistor
R1	ERDS2TJ910	Carbon 91 ohms 1/4W	Q12	2SD601-RS	Transistor
R2	ERJ3GEYJ750	Carbon 75 ohms 1/16W	Q13	2SC2404-CD	Transistor
R3	ERJ3GEYJ101	Carbon 100 ohms 1/16W	Q14-16	2SD601-RS	Transistor
R4	ERJ3GEYJ223	Carbon 22K ohms 1/16W	Q17	2SB709-RS	Transistor
R5	ERJ3GEYJ682	Carbon 6.8K ohms 1/16W	Q18-21	2SC2404-CD	Transistor
R6	ERJ3GEYJ103	Carbon 10K ohms 1/16W	Q23,24	2SC2404-CD	Transistor
R7	ERJ3GEYJ101	Carbon 100 ohms 1/16W	Q25	2SK198-Q	Transistor
C1	ECA1EFZ181	Electrolytic 180 $\mu$ F 25V	Q26-28	2SC2404-CD	Transistor
C2	ECEA1CKS470	Electrolytic 47 $\mu$ F 16V	Q29,30	2SA1022-C	Transistor
C3-6	ECEA1CKA100	Electrolytic 10 $\mu$ F 16V	Q31	2SC2404-CD	Transistor
C8	ECEA1CKA220	Electrolytic 22 $\mu$ F 16V	Q32	2SD601-RS	Transistor
C9	YW5F104Z2VB	Ceramic 0.1 $\mu$ F	Q33	2SA1022-C	Transistor
CN1	YW530141410	14-pin Connector	Q34,35	2SD601-RS	Transistor
CN2,3	FCN214J050GA	50-pin Connector	Q36	2SC2404-CD	Transistor
CN4,5	YW530140410	4-pin Connector	Q37,38	2SD601-RS	Transistor
CN6	YW530140810	8-pin Connector	Q39	2SK198-Q	Transistor
CN7	YW530140310	3-pin Connector	Q40	2SB793-RS	Transistor
CN8	YW530140810	8-pin Connector	Q41	2SD601-RS	Transistor
F1	YWSSFR4AF002	Current Fuse 0.4A	Q42	2SB793-RS	Transistor
			Q43-45	2SD601-RS	Transistor
			Q46	2SB793-RS	Transistor
			Q47	2SD601-RS	Transistor
			Q48	2SB793-RS	Transistor
			D1	MA165	Diode
			D2	MA151K	Diode
			R1	YF2116333GT	Carbon 33K ohms 1/10W
<b>DEMODULATOR BOARD</b>			R2	YF2116683GT	Carbon 68K ohms 1/10W
PCB7 (RTL)	YWVKZADP7E2A	Printed Circuit Board Assy	R3	YF2116681JT	Carbon 680 ohms 1/10W
IC1	NJM592M8	IC	R4	ERJ6GEYJ102	Carbon 1K ohms 1/10W
IC2	TL092CPS	IC	R5	ERJ6GEYJ102	Carbon 1K ohms 1/10W
IC3	YWLM1881M	IC	R6	YF2116560JT	Carbon 56 ohms 1/10W
IC4	YWCX20095A	IC	R7	YF2116153JT	Carbon 15K ohms 1/10W
IC5	NJM592M8	IC	R8	YF2116123JT	Carbon 12K ohms 1/10W
IC6	NJM4556M	IC	R9	YF2116470JT	Carbon 47 ohms 1/10W
IC7	TL092CPS	IC	R10	YF2116470JT	Carbon 47 ohms 1/10W
IC8	NJM2903M	IC	R11	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W
IC9	UPD74HC4050G	IC	R12	YF2116102JT	Carbon 1K ohms 1/10W
IC10	YWTC4S66FR	IC	R13	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W
IC11	YWUPD4538BG	IC	R14	YF2116333GT	Carbon 33K ohms 1/10W
IC12	YWUPD4053BG	IC	R15	YF2116473GT	Carbon 47K ohms 1/10W
IC13	YWUPC4062G2	IC	R16	YF2116203JT	Carbon 20K ohms 1/10W
IC14	YWUPD4053BG	IC	R17	YF2116101JT	Carbon 100 ohms 1/10W
IC15	YWTC4S69F	IC	R18	ERJ6GEYJ393	Carbon 39K ohms 1/10W
IC16	YWTC4S66FR	IC	R19	YF2116683GT	Carbon 68K ohms 1/10W
Q1	2SC2404-CD	Transistor	R20	ERJ6GEYJ102	Carbon 1K ohms 1/10W
Q2	2SK198-Q	Transistor	R21	YF2116821GT	Carbon 820 ohms 1/10W
Q3-5	2SC2404-CD	Transistor	R22	YF2116331JT	Carbon 330 ohms 1/10W
			R23	YF2116821GT	Carbon 820 ohms 1/10W
			R24	ERJ6GEYJ103	Carbon 10K ohms 1/10W
			R25	YF2116391JT	Carbon 390 ohms 1/10W
			R26	YF2116332JT	Carbon 3.3K ohms 1/10W

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
R27	ERJ6GEYJ103	Carbon 10K ohms 1/10W	R109	YF2116821GT	Carbon 820 ohms 1/10W
R28,29	YF2116682JT	Carbon 6.8K ohms 1/10W	R110,111	YF2116101JT	Carbon 100 ohms 1/10W
R30	YF2116473GT	Carbon 47K ohms 1/10W	R112	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R31	YF2116332JT	Carbon 3.3K ohms 1/10W	R113	YF2116911JT	Carbon 910 ohms 1/10W
R32	YF2116101JT	Carbon 100 ohms 1/10W	R114	YW2116242JT	Carbon 2.4K ohms 1/10W
R33	YF2116332JT	Carbon 3.3K ohms 1/10W	R115	YF2116101JT	Carbon 100 ohms 1/10W
R34,35	YF2116331JT	Carbon 330 ohms 1/10W	R116	ERJ6GEYJ103	Carbon 10K ohms 1/10W
R38	YF2116273GT	Carbon 27K ohms 1/10W	R117	YF2116101JT	Carbon 100 ohms 1/10W
R39	YF2116683GT	Carbon 68K ohms 1/10W	R118	YF2116391JT	Carbon 390 ohms 1/10W
R40	YF2116822JT	Carbon 8.2K ohms 1/10W	R119	YF2116332JT	Carbon 3.3K ohms 1/10W
R41	ERJ6GEYJ102	Carbon 1K ohms 1/10W	R120	ERJ6GEYJ103	Carbon 10K ohms 1/10W
R42	YF2116152JT	Carbon 1.5K ohms 1/10W	R121	YF2116682JT	Carbon 6.8K ohms 1/10W
R43,44	YF2116101JT	Carbon 100 ohms 1/10W	R122	YF2116473GT	Carbon 47K ohms 1/10W
R45	YF2116181JT	Carbon 180 ohms 1/10W	R123	YF2116682JT	Carbon 6.8K ohms 1/10W
R46	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W	R124	YF2116332JT	Carbon 3.3K ohms 1/10W
R47	YF2116122JT	Carbon 1.2K ohms 1/10W	R125	YF2116101JT	Carbon 100 ohms 1/10W
R48	YF2116152JT	Carbon 1.5K ohms 1/10W	R126	YF2116332JT	Carbon 3.3K ohms 1/10W
R49	ERJ6GEYJ103	Carbon 10K ohms 1/10W	R127,128	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R50,51	YF2116152JT	Carbon 1.5K ohms 1/10W	R129	YF2116822JT	Carbon 8.2K ohms 1/10W
R52-55	YF2116332JT	Carbon 3.3K ohms 1/10W	R130	YF2116202JT	Carbon 2K ohms 1/10W
R66	YF2116473GT	Carbon 47K ohms 1/10W	R131	YF2116101JT	Carbon 100 ohms 1/10W
R67	YF2116152JT	Carbon 1.5K ohms 1/10W	R132	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R68	YF2116272JT	Carbon 2.7K ohms 1/10W	R133	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W
R69	ERJ6GEYJ103	Carbon 10K ohms 1/10W	R134	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R70	YF2116681JT	Carbon 680 ohms 1/10W	R135,136	YF2116332JT	Carbon 3.3K ohms 1/10W
R71	YF2116684JT	Carbon 680K ohms 1/10W	R137	ERJ6GEYJ103	Carbon 10K ohms 1/10W
R72,73	ERJ6GEYJ102	Carbon 1K ohms 1/10W	R138	YF2116332JT	Carbon 3.3K ohms 1/10W
R74,75	YF2116682JT	Carbon 6.8K ohms 1/10W	R139	YF2116152JT	Carbon 1.5K ohms 1/10W
R76	ERJ6GEYJ102	Carbon 1K ohms 1/10W	R140	YF2116183GT	Carbon 18K ohms 1/10W
R77	YF2116152JT	Carbon 1.5K ohms 1/10W	R141	ERJ6GEYJ103	Carbon 10K ohms 1/10W
R78	ERJ6GEYJ103	Carbon 10K ohms 1/10W	R142,143	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R79	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W	R144	YF2116162JT	Carbon 1.6K ohms 1/10W
R80	YF2116332JT	Carbon 3.3K ohms 1/10W	R145	YF2116563JT	Carbon 56K ohms 1/10W
R81	YF2116101JT	Carbon 100 ohms 1/10W	R146	YW2116182JT	Carbon 1.8K ohms 1/10W
R82,83	YF2116332JT	Carbon 3.3K ohms 1/10W	R147	YF2116514GT	Carbon 510K ohms 1/10W
R86	YF2116563JT	Carbon 56K ohms 1/10W	R148	ERJ6GEYJ103	Carbon 10K ohms 1/10W
R87	YF2116333GT	Carbon 33K ohms 1/10W	R149	YF2116272JT	Carbon 2.7K ohms 1/10W
R88	YF2116332JT	Carbon 3.3K ohms 1/10W	R150	YF2116474JT	Carbon 470K ohms 1/10W
R89,90	ERJ6GEYJ102	Carbon 1K ohms 1/10W	R151	YF2116112JT	Carbon 1.1K ohms 1/10W
R91	YF2116471JT	Carbon 470 ohms 1/10W	R152,153	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W
R92	YF2116333GT	Carbon 33K ohms 1/10W	R155	YF2116222GT	Carbon 2.2K ohms 1/10W
R93	YF2116473GT	Carbon 47K ohms 1/10W	R156	YF2116563JT	Carbon 56K ohms 1/10W
R94	YF2116202JT	Carbon 2K ohms 1/10W	R157	ERJ6GEYJ103	Carbon 10K ohms 1/10W
R95	YF2116510JT	Carbon 51 ohms 1/10W	R158	YF2116474JT	Carbon 470K ohms 1/10W
R96	YF2116153JT	Carbon 15K ohms 1/10W	R159	YWR1220P473D	Metal 47K ohms
R97	YF2116682JT	Carbon 6.8K ohms 1/10W	R160	YWR1220P153D	Metal 15K ohms
R98,99	YF2116470JT	Carbon 47 ohms 1/10W	R161	R1220P133D	Metal 13K ohms
R100	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W	R162	YWR1220P393D	Metal 39K ohms
R101	ERJ6GEYJ223	Carbon 22K ohms 1/10W	R163	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R102	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W	R164	YF2116331JT	Carbon 330 ohms 1/10W
R103	YF2116563GT	Carbon 56K ohms 1/10W	R165	YWR1220P153D	Metal 15K ohms
R104	YF2116331JT	Carbon 330 ohms 1/10W	R166	YWR1220P473D	Metal 47K ohms
R105	YF2116333GT	Carbon 33K ohms 1/10W	R167	R1220P133D	Metal 13K ohms
R106	ERJ6GEYJ393	Carbon 39K ohms 1/10W	R168	YWR1220P393D	Metal 39K ohms
R107,108	YF2116683GT	Carbon 68K ohms 1/10W	R169	ERJ6GEYJ102	Carbon 1K ohms 1/10W

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R170	YF2116331JT	Carbon	330 ohms 1/10W	C41	ECEA1EU4R7	Electrolytic	4.7 $\mu$ F 25V
R172	YF2116330JT	Carbon	33 ohms 1/10W	C42	YWRJ410V222M	Electrolytic	2200 $\mu$ F 10V
R173,174	YF2116332JT	Carbon	3.3K ohms 1/10W	C43	ECEA1EKA4R7	Electrolytic	4.7 $\mu$ F 25V
R175,176	YF2116682JT	Carbon	6.8K ohms 1/10W	C46	ECEA1CU101	Electrolytic	100 $\mu$ F 16V
R177,178	ERJ6GEYJ223	Carbon	22K ohms 1/10W	C47	YF400100CHJT	Ceramic	10 pF
R179	YF2116222GT	Carbon	2.2K ohms 1/10W	C50,51	YF400104FZT	Ceramic	0.1 $\mu$ F
R180	YF2116332JT	Carbon	3.3K ohms 1/10W	C52	ECSF1AE476	Tantalum	47 $\mu$ F 10V or
R181,182	ERJ6GEYJ223	Carbon	22K ohms 1/10W		YWS21A476	Electrolytic	47 $\mu$ F 10V
R183	YF2116222GT	Carbon	2.2K ohms 1/10W	C53	ECSF1CE476	Tantalum	47 $\mu$ F 16V
R184	YF2116272JT	Carbon	2.7K ohms 1/10W	C54	ECSF1AE336	Tantalum	33 $\mu$ F 10V
R185	YF2116302GT	Carbon	3K ohms 1/10W	C55	YF400104FZT	Ceramic	0.1 $\mu$ F
R186	ERJ6GEYJ103	Carbon	10K ohms 1/10W	C56	ECEA1AU470	Electrolytic	47 $\mu$ F 10V
R187	YF2116682JT	Carbon	6.8K ohms 1/10W	C57	ECEA1CU470	Electrolytic	47 $\mu$ F 16V
R188	ERJ6GEYJ103	Carbon	10K ohms 1/10W	C58	YF400101CHJT	Ceramic	100 pF
R189	YF2116561JT	Carbon	560 ohms 1/10W	C59	ECEA1AU470	Electrolytic	47 $\mu$ F 10V
R190	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C60	ECEA1AU101	Electrolytic	100 $\mu$ F 10V
VR1	EVML3GA00B23	Variable Resistor	2K ohms	C61	ECEA1HU010	Electrolytic	1 $\mu$ F 50V
VR2	EVML3GA00B13	Variable Resistor	1K ohms	C62,63	YF400050CHDT	Ceramic	5 pF
VR3,4	EVML3GA00B53	Variable Resistor	5KB ohms	C65	ECSF1CE476	Tantalum	47 $\mu$ F 16V
C1	ECEA1CU101	Electrolytic	100 $\mu$ F 16V	C66	ECSF1AE476	Tantalum	47 $\mu$ F 10V or
C2	YF400120CHJT	Ceramic	12 pF		YWS21A476	Electrolytic	47 $\mu$ F 10V
C3	YF400104FZT	Ceramic	0.1 $\mu$ F	C67	ECEA1CU101	Electrolytic	100 $\mu$ F 16V
C4	ECEA1AU470	Electrolytic	47 $\mu$ F 10V	C68	ECEA1AU470	Electrolytic	47 $\mu$ F 10V
C5	ECSF1CE476	Tantalum	47 $\mu$ F 16V	C69	ECEA1CU100	Electrolytic	10 $\mu$ F 16V
C6	ECEA1HU0R1	Electrolytic	0.1 $\mu$ F 50V	C70	ECSF1CE106	Tantalum	10 $\mu$ F 16V
C7	YF400104FZT	Ceramic	0.1 $\mu$ F	C71	ECQM1H104JZ	Plastic	0.1 $\mu$ F 50V
C8,9	ECEA1AU470	Electrolytic	47 $\mu$ F 10V	C72	ECSF1AE225	Tantalum	2.2 $\mu$ F 10V
C10	ECSF1CE476	Tantalum	47 $\mu$ F 16V	C73	ECSF1CE476	Tantalum	47 $\mu$ F 16V
C11	YF400101CHJT	Ceramic	100 pF	C74	YF400104FZT	Ceramic	0.1 $\mu$ F
C12	ECEA1AU101	Electrolytic	100 $\mu$ F 10V	C75	ECEA1VSN2R2	Electrolytic	2.2 $\mu$ F 35V
C13	ECEA1HU010	Electrolytic	1 $\mu$ F 50V	C76	YF400104FZT	Ceramic	0.1 $\mu$ F
C14	YF400050CHDT	Ceramic	5 pF	C77	ECSF1CE106	Tantalum	10 $\mu$ F 16V
C15	YF400270CHJT	Ceramic	27 pF	C78	ECSF1CE476	Tantalum	47 $\mu$ F 16V
C18	ECSF1CE476	Tantalum	47 $\mu$ F 16V	C79	YF400103XKT	Ceramic	0.01 $\mu$ F
C19	ECEA1AKN470	Electrolytic	47 $\mu$ F 10V	C80	ECEA1AU470	Electrolytic	47 $\mu$ F 10V
C20	YF400220CHJT	Ceramic	22 pF	C81	ECSF1CE476	Tantalum	47 $\mu$ F 16V
C21	ECEA1AU470	Electrolytic	47 $\mu$ F 10V	C82	ECSF1AE476	Tantalum	47 $\mu$ F 10V or
C22	ECEA1CU101	Electrolytic	100 $\mu$ F 16V		YWS21A476	Electrolytic	47 $\mu$ F 10V
C23	YF400104FZT	Ceramic	0.1 $\mu$ F	C83	YF400101CHJT	Ceramic	100 pF
C24	ECEA1AU330	Electrolytic	33 $\mu$ F 10V	C84	YF400104FZT	Ceramic	0.1 $\mu$ F
C25	ECEA1CKA100	Electrolytic	10 $\mu$ F 16V	C85	ECEA1CKA100	Electrolytic	10 $\mu$ F 16V
C26	ECEA1HK010	Electrolytic	1 $\mu$ F 50V	C86	ECEA1CU101	Electrolytic	100 $\mu$ F 16V
C27	YF400104FZT	Ceramic	0.1 $\mu$ F	C87	ECEA1AKA220	Electrolytic	22 $\mu$ F 10V
C28	ECEA1HU010	Electrolytic	1 $\mu$ F 50V	C88	ECEA1AU101	Electrolytic	100 $\mu$ F 10V
C29	ECEA1CU470	Electrolytic	47 $\mu$ F 16V	C89	YF400224FZT	Ceramic	0.22 $\mu$ F
C30	YF400151CHJT	Ceramic	150 pF	C90	ECEA0JU101	Electrolytic	100 $\mu$ F 6.3V
C31	YF400104FZT	Ceramic	0.1 $\mu$ F	C91	YF400103XKT	Ceramic	0.01 $\mu$ F
C32	ECEA1CU100	Electrolytic	10 $\mu$ F 16V	CT1	YWCDY40AS	Trimmer Capacitor	
C33,34	YF400104FZT	Ceramic	0.1 $\mu$ F	CT2	YWCDX20APS	Trimmer Capacitor	
C35	ECEA1CU470	Electrolytic	47 $\mu$ F 16V	L7,8	ELJFA470KF	Coil	47 $\mu$ H
C36	ECEA0JKN470	Electrolytic	47 $\mu$ F 6.3V	L18,19	ELJFA100KF	Coil	10 $\mu$ H
C37	YF400221CHJT	Ceramic	220 pF	CF1	ELB4B538	Filter	
C38	ECEA0JKN330	Electrolytic	33 $\mu$ F 6.3V	CF2	ELKTH101GA	Filter	
C39	ECSF1AE476	Tantalum	47 $\mu$ F 10V or	CF3,4	YWT7K26MBPF	Filter	
	YWS21A476	Electrolytic	47 $\mu$ F 10V				
C40	ECEA1AU101	Electrolytic	100 $\mu$ F 10V				

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
CF5,6	YWYS30545	Filter	R9	YF2116101JT	Carbon 100 ohms 1/10W
CF7	YWYS30549	Filter	R10	ERJ6GEYJ102	Carbon 1K ohms 1/10W
CF8	YWYS30546	Filter	R11	YF2116331JT	Carbon 330 ohms 1/10W
CN1	FCN215Q050GA	50-pin Connector	R12	YW2116182JT	Carbon 1.8K ohms 1/10W
TP1-10	YW32BM5A	Test- Pin	R13	YF2116331JT	Carbon 330 ohms 1/10W
M38	YVW2HA0977A3	Shield Cover	R14	YF2116473GT	Carbon 47K ohms 1/10W
M39	YVW2HA0978C2	Shield Case	R15	YF2116823JT	Carbon 82K ohms 1/10W
			R16	YF2116561JT	Carbon 560 ohms 1/10W
			R17,18	YF2116221JT	Carbon 220 ohms 1/10W
			R19	YW2116182JT	Carbon 1.8K ohms 1/10W
			R20,21	YF2116101JT	Carbon 100 ohms 1/10W
			R22	ERJ6GEYJ562	Carbon 5.6K ohms 1/10W
			R23	YF2116302GT	Carbon 3K ohms 1/10W
			R24	YF2116511JT	Carbon 510 ohms 1/10W
			R25	YF2116152JT	Carbon 1.5K ohms 1/10W
<b>MODULATOR BOARD</b>			R26,27	YF2116101JT	Carbon 100 ohms 1/10W
PCB8 (RTL)	YVWKZAD7AE3A	Printed Circuit Board Assy	R28	ERDS2TJ301	Carbon 300 ohms 1/4W
IC1	YWUPC4062G2	IC	R29,30	YF2116272JT	Carbon 2.7K ohms 1/10W
IC2	YWLM1881M	IC	R31,32	YF21162R2JT	Carbon 2.2 ohms 1/10W
IC3	YWTC4S69F	IC	R33	ERJ6GEYJ103	Carbon 10K ohms 1/10W
IC4	YWTC4S66FR	IC	R34	ERDS2TJ750	Carbon 75 ohms 1/4W
IC5	TLC272CPS	IC	R35	YF2116331JT	Carbon 330 ohms 1/10W
IC6	YWSN16913P	IC	R36	ERJ6GEYJ102	Carbon 1K ohms 1/10W
IC7	YWTC4S66FR	IC	R37	YWR1220P393D	Metal 39K ohms
IC8	YWTC7S08F	IC	R38	R1220P133D	Metal 13K ohms
IC9	UPD74HC390G	IC	R39	YWR1220P153D	Metal 15K ohms
IC10	YWUPD4538BG	IC	R40	YWR1220P473D	Metal 47K ohms
IC11	YWUPD74HC08G	IC	R43	YF2116272JT	Carbon 2.7K ohms 1/10W
IC12	NJM1496M	IC	R44	YF2116684JT	Carbon 680K ohms 1/10W
IC13,14	UPD74HC221AG	IC	R45-48	ERJ6GEYJ103	Carbon 10K ohms 1/10W
Q1-3	25C2404-CD	Transistor	R49,50	ERJ6GEYJ223	Carbon 22K ohms 1/10W
Q4	25D601-RS	Transistor	R51	ERJ6GEYJ103	Carbon 10K ohms 1/10W
Q5-9	25C2404-CD	Transistor	R52	ERJ6GEYJ562	Carbon 5.6K ohms 1/10W
Q10	25A1022-CD	Transistor	R53	ERJ6GEYJ103	Carbon 10K ohms 1/10W
Q11,12	25C2404-CD	Transistor	R54	YF2116224JT	Carbon 220K ohms 1/10W
Q13	25A1022-CD	Transistor	R55	YWR1220P362D	Metal 3.6K ohms
Q14	25B793-RS	Transistor	R56	YFR1220P104D	Metal 100K ohms
Q15,16	25D601-RS	Transistor	R57	YWR1220P223D	Metal 22K ohms
Q17,18	25B793-RS	Transistor	R58	ERJ6GEYJ562	Carbon 5.6K ohms 1/10W
Q19,20	25D601-RS	Transistor	R59	YF2116220JT	Carbon 22 ohms 1/10W
Q21	25A1022-CD	Transistor	R60	YF2116202JT	Carbon 2K ohms 1/10W
Q22,23	25C2404-CD	Transistor	R61	YW2116182JT	Carbon 1.8K ohms 1/10W
Q24	25B793-RS	Transistor	R62	YF2116331JT	Carbon 330 ohms 1/10W
Q25	25D601-RS	Transistor	R63	ERJ6GEYJ102	Carbon 1K ohms 1/10W
Q26	25B793-RS	Transistor	R64	YWR1220P393D	Metal 39K ohms
Q27,28	25D601-RS	Transistor	R65	YWR1220P183D	Metal 18K ohms
Q29	25B709-RS	Transistor	R66	YWR1220P153D	Metal 15K ohms
Q30	25D601-RS	Transistor	R67	YWR1220P473D	Metal 47K ohms
D1	MA151WA	Diode	R68	YF2116153JT	Carbon 15K ohms 1/10W
R2	YF2116113JT	Carbon 11K ohms 1/10W	R69,70	YF2116222GT	Carbon 2.2K ohms 1/10W
R3	YF2116822JT	Carbon 8.2K ohms 1/10W	R71	YF2116752JT	Carbon 7.5K ohms 1/10W
R4	YF2116152JT	Carbon 1.5K ohms 1/10W	R72	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W
R5	YF2116511JT	Carbon 510 ohms 1/10W	R73,74	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R6	YF2116431JT	Carbon 430 ohms 1/10W	R75,76	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W
R7	YW2116242JT	Carbon 2.4K ohms 1/10W	R77	ERJ6GEYJ102	Carbon 1K ohms 1/10W
R8	YF2116682JT	Carbon 6.8K ohms 1/10W			



REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R78	YF2116821GT	Carbon	820 ohms 1/10W	C24	ECEA1AKA220	Electrolytic	22 $\mu$ F 10V
R79	YF2116122JT	Carbon	1.2K ohms 1/10W	C25	YF400102XKT	Ceramic	1000 pF
R80	YF2116471JT	Carbon	470 ohms 1/10W	C26	ECEA0JKA221	Electrolytic	220 $\mu$ F 6.3V
R81	YF2116750JT	Carbon	75 ohms 1/10W	C27	YF400103XKT	Ceramic	0.01 $\mu$ F
R82	ERJ6GEYJ103	Carbon	10K ohms 1/10W	C28	YF400102XKT	Ceramic	1000 pF
R83,84	YF2116332JT	Carbon	3.3K ohms 1/10W	C29	ECSF1VE105	Tantalum	1 $\mu$ F 35V
R85	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C30,31	ECEA1AKG101	Electrolytic	100 $\mu$ F 10V
R86	YF2116471JT	Carbon	470 ohms 1/10W	C32	YF400223XKT	Ceramic	0.022 $\mu$ F
R87	YF2116332JT	Carbon	3.3K ohms 1/10W	C33	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V
R88,89	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C34	YF400104FZT	Ceramic	0.1 $\mu$ F
R90,91	YF2116683GT	Carbon	68K ohms 1/10W	C35,36	YW400560UJJT	Ceramic	56 pF
R92	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C37	ECEA1AKG101	Electrolytic	100 $\mu$ F 10V
R93	ERJ6GEYJ223	Carbon	22K ohms 1/10W	C38	ECEA0JKA220	Electrolytic	22 $\mu$ F 6.3V
R94-97	YF2116222GT	Carbon	2.2K ohms 1/10W	C39	ECEA1AKG101	Electrolytic	100 $\mu$ F 10V
R98,99	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C40	ECEA0JKN470	Electrolytic	47 $\mu$ F 6.3V
R100	YF2116222GT	Carbon	2.2K ohms 1/10W	C41	ECEA1AKG101	Electrolytic	100 $\mu$ F 10V
R101	YF2116332JT	Carbon	3.3K ohms 1/10W	C42	ECQB1H103JF	Plastic	0.01 $\mu$ F 50V
R102	YF2116222GT	Carbon	2.2K ohms 1/10W	C43	ECSF1AE476	Tantalum	47 $\mu$ F 10V
R103	YF2116272JT	Carbon	2.7K ohms 1/10W	C44	ECEA1AKG101	Electrolytic	100 $\mu$ F 10V
R104,105	ERJ6GEYJ223	Carbon	22K ohms 1/10W	C45	ECSF1CE476	Tantalum	47 $\mu$ F 16V
R106	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W	C46	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V
R107	YF2116332JT	Carbon	3.3K ohms 1/10W	C47	ECEA1AKN470	Electrolytic	47 $\mu$ F 10V
R108	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W	C48	ECEA0JKA221	Electrolytic	220 $\mu$ F 6.3V
R109,110	YF2116222GT	Carbon	2.2K ohms 1/10W	C49	YF400103XKT	Ceramic	0.01 $\mu$ F
R111,112	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C50	YW400080CHD	Ceramic	8 pF
R113	YF2116682JT	Carbon	6.8K ohms 1/10W	C51	YF400121CHJT	Ceramic	120 pF
R114	YF2116202JT	Carbon	2K ohms 1/10W	C52	YW400090CHDT	Ceramic	9 pF
R191	YF2116122JT	Carbon	1.2K ohms 1/10W	C53,54	YF400121CHJT	Ceramic	120 pF
VR1	EVML3GA00B23	Variable Resistor	2K ohms	C55	YW400080CHD	Ceramic	8 pF
VR2	EVML3GA00B13	Variable Resistor	1K ohms	C56	YF400121CHJT	Ceramic	120 pF
VR3	EVML3GA00B23	Variable Resistor	2K ohms	C57	YW400090CHDT	Ceramic	9 pF
VR4	EVML3GA00B14	Variable Resistor	10K ohms	C58,59	YF400121CHJT	Ceramic	120 pF
VR5,6	EVML3GA00B13	Variable Resistor	1K ohms	C60	YF400103XKT	Ceramic	0.01 $\mu$ F
VR7,8	EVML3GA00B24	Variable Resistor	20K ohms	C61	ECEA1AKG101	Electrolytic	100 $\mu$ F 10V
VR9	EVML3GA00B54	Variable Resistor	50K ohms	C62,63	ECQB1H103JF	Plastic	0.01 $\mu$ F 50V
VR10,11	EVML3GA00B24	Variable Resistor	20K ohms	C64	ECSF1AE476	Tantalum	47 $\mu$ F 10V
C1	ECEA1AKG101	Electrolytic	100 $\mu$ F 10V	C65	ECQP1102GZ	Plastic	1000 pF 100V
C2	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V	C66	ECSF1AE476	Tantalum	47 $\mu$ F 10V
C3	YF400180CHJT	Ceramic	18 pF	C67,68	ECQB1H103JF	Plastic	0.01 $\mu$ F 50V
C4,5	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V	C69	YF400121CHJT	Ceramic	120 pF
C6	ECEA1AKG101	Electrolytic	100 $\mu$ F 10V	C70	YW400090CHDT	Ceramic	9 pF
C7	ECSF1CE476	Tantalum	47 $\mu$ F 16V	C71	YF400121CHJT	Ceramic	120 pF
C8	YWRJ410V471M	Electrolytic	470 $\mu$ F 10V	C72	YW400080CHD	Ceramic	8 pF
C9	ECEA1AKN470	Electrolytic	47 $\mu$ F 10V	C73	YF400121CHJT	Ceramic	120 pF
C10	ECSF1CE476	Tantalum	47 $\mu$ F 16V	C74	YF400103XKT	Ceramic	0.01 $\mu$ F
C11	ECSF1EE476	Tantalum	47 $\mu$ F 25V	C75	ECSF0JE476	Tantalum	47 $\mu$ F 6.3V
C12	YWRJ410V222M	Electrolytic	2200 $\mu$ F 10V	C76	ECEA1CKN100	Electrolytic	10 $\mu$ F 16V
C13	ECSF1CE476	Tantalum	47 $\mu$ F 16V	L4	ELJFA150KF	Coil	15 $\mu$ H
C14	ECEA1AKG101	Electrolytic	100 $\mu$ F 10V	L5	EL05SI390K	Coil	39 $\mu$ H
C15	ECEA0JKA220	Electrolytic	22 $\mu$ F 6.3V	L6	ELJFA270KF	Coil	27 $\mu$ H
C16,17	ECEA1AKG101	Electrolytic	100 $\mu$ F 10V	L13	EIL7EN010Q	Coil	
C18	ECSF1AE476	Tantalum	47 $\mu$ F 10V	L14	EIL7EN011Q	Coil	
C19	YF400102XKT	Ceramic	1000 pF	L15	EIL7EN012Q	Coil	
C20	YF400104FZT	Ceramic	0.1 $\mu$ F	L16	EIL7EN010Q	Coil	
C21	YF400224FZT	Ceramic	0.22 $\mu$ F	L17	EIL7EN011Q	Coil	
C22	YF400104FZT	Ceramic	0.1 $\mu$ F				

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
L18,19 L20 L21 X1 CF1	EIL7EN012Q EIL7EN011Q EIL7EN010Q YWM2D17M734 YWT5V8MLPF	Coil Coil Coil Crystal Oscillator Filter	R17 R18 R19,20 R21 R22	YF2116474JT YF2116272JT ERJ6GEYJ103 ERDS2TJ562 YF2116823JT	Carbon 470K ohms 1/10W Carbon 2.7K ohms 1/10W Carbon 10K ohms 1/10W Carbon 5.6K ohms 1/4W Carbon 82K ohms 1/10W
CF2,3 CN1 J1,4 J6 TP1-10 M41	YWT5V0R5MLPF FCN215Q050GA ERJ6GEY0R00 ERJ6GEY0R00 YW32BM5A YVW2HA0979A2	Filter Connector Carbon 0 ohms 1/10W Carbon 0 ohms 1/10W Test-Pin Shield Case	R23 R24 R25 R26,29 R30	YF2116391JT ERG2CJ223 ERDS2TJ243 ERDS1TJ473 ERDS2TJ683	Carbon 390 ohms 1/10W Metal 22K ohms 2W Carbon 24K ohms 1/4W Carbon 47K ohms 1/2W Carbon 68K ohms 1/4W
M42	YVW2HB0977A3	Shield Cover	R31 R32 R34 R35 R36	ERDS2TJ103 YF2116684JT ERDS2TJ102 YF2116391JT YF2116202JT	Carbon 10K ohms 1/4W Carbon 680K ohms 1/10W Carbon 1K ohms 1/4W Carbon 390 ohms 1/10W Carbon 2K ohms 1/10W
<b>POWER BOARD</b>			R37 R39,40 R41 R42 R43	ERF2AKR68 ERJ6GEYJ103 ERJ6GEYJ223 YF2116124GT YF2116134GT	Wire Wound 0.68 ohms 2W Carbon 10K ohms 1/10W Carbon 22K ohms 1/10W Carbon 120K ohms 1/10W Carbon 130K ohms 1/10W
PCB9 (RTL) IC1 IC2 IC3 IC4	YVWKZPS70P1A YW78L05UATE2 YWTC75U04F YWTC7504F YWTC4S66FR	Printed Circuit Board Assy IC IC IC IC	VR1 C1,2 C3 C5 C7	EVML3GA00B24 YWLPH2C471S1 ECQM2104KZ YWRJ3160V220 YWRJ310V102M	Variable Resistor 20K ohms Electrolytic 470 µF 100V Plastic 0.1 µF Electrolytic 22 µF 16V Electrolytic 1000 µF 10V
IC5 Q3,4 Q5,6 Q7 Q8	TL062CPS 2SD814-QRS 2SB792A-RS 2SD814-QRS 2SJ122	IC Transistor Transistor Transistor Transistor	C8 C10 C11,12 C13 C14	YWRJ3160V101 ECQM1103KZ YF400200CHJT YF400104FZT ECQM1104KZ	Electrolytic 100 µF 16V Plastic 0.01 µF 100V Ceramic 20 pF Ceramic 0.1 µF Plastic 0.1 µF 100V
D1 D2 D3-5 D6 D7-9	MA1062-M MA151K MA182 YWERC9102 MA182	Diode Diode Diode Diode Diode	C15 C16 C17 C18 C19	YWRJ316V100M YF400223XKT YWRJ3160V220 YWRJ363V100M YWRJ325V100M	Electrolytic 10 µF 16V Ceramic 0.022 µF Electrolytic 22 µF 16V Electrolytic 10 µF 63V Electrolytic 10 µF 25V
D10 D11 D12 D13 D14	YFRD22EB2 MA1051-M MA1056H MA182 YWRD27EB4	Diode Diode Diode Diode Diode	C20 C21 C22,23 L1,2 L3	YF400103XKT YWRJ3160V101 YWRJ316V101M ELC18E005 YWS100522272	Ceramic 0.01 µF Electrolytic 100 µF 16V Electrolytic 100 µF 16V Coil 160 µH Coil 2.7 µH
D15,16 D17,18 R1 R2 R4	YFRD22EB2 V03G ERJ6GEYJ103 ERG2CJ223 YW2116182JT	Diode Diode Carbon 10K ohms 1/10W Metal 22K ohms 2W Carbon 1.8K ohms 1/10W	X1 CN1 CN2 CN3 CN4	YWSC16MHZ YW530140410 YW530140310 YW53014-0210 YW530140310	Crystal Oscillator 16 MHZ 4-pin Connector 3-pin Connector 2-pin Connector 3-pin Connector
R5,6 R8 R9 R10 R11	ERDS1TJ301 ERJ6GEYJ102 ERF2AK1R0 ER050CKF5602 YW2116182JT	Carbon 300 ohms 1/2W Carbon 1K ohms 1/10W Wire Wound 2 ohms 2W Metal 56K ohms 1/2W Carbon 1.8K ohms 1/10W	J38 TP1,2	ERDS2TC0 YW32BM7R5	Jumper Resistor Test- Pin
R12 R13 R14 R15 R16	ERDS1TJ303 ERJ6GEYJ223 YF2116302GT ERJ6GEYJ103 ERDS1TJ270	Carbon 30K ohms 1W Carbon 22K ohms 1/10W Carbon 3K ohms 1/10W Carbon 10K ohms 1/10W Carbon 27 ohms 1W			

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
<b>POWER SUPPLY BOARD</b>			M44	YWZSVBIS01	Insulator Cover
PCB10 (RTL)	YWSVBP50SX-B	Printed Circuit Board Assy	M45	YWTC45ACPT03	Rubber
IC1	YWEH-12A	IC	M46	YWMVTBFELA1	Mounting Angle
IC2	AN1431T	IC	M47	YWZNPSVB12SD	Decoration Label
Q1	2SK1386	FET	M48	YWMSVCUBW1	Bar A
PC1,2	YWPS25011	Photo Coupler	M49	YWMSVCUBW2	Bar B
D1	YWD3SBA60	Diode			
D4	YWERB38-05	Diode			
D5,6	YWUF4005	Diode			
D7	MA645	Diode			
D9	YWRD15EB3	Diode			
R1	YW5D-13	Thermistor			
R2	ERG1SJ823	Metal 82K ohms 1W			
R3	ERX3SJ7R5	Metal 7.5 ohms 3W			
R4	ERG1ANJ471	Metal 470 ohms 1W			
R6	YWRNF1S102J	Fuse Resistor 1K ohms 1W			
R7	YWRNF1S220J	Fuse Resistor 22 ohms 1W			
R8	ERG1SJ683	Metal 68K ohms 1W			
R9	ERX2SJ22	Metal 0.22 ohms 2W			
R10	ERQ12AJ101P	Fuse Resistor 100 ohms			
R17	ER0S2CKF3002	Metal 30K ohms 2W			
R18	ER0S2CKF6491	Metal 6.49K ohms 2W			
R19	ERD25FJ223	Carbon 22K ohms 1/4W			
R21	ERD25FJ201	Carbon 200 ohms 1/4W			
R22	ERD25FJ182	Carbon 1.8K ohms 1/4W			
R23	ERD25FJ361	Carbon 360 ohms 1/4W			
R24	ERD25FJ333	Carbon 33K ohms 1/4W			
VR1	EVM31GA00B53	Variable Resistor 5K ohms			
C1	ECQ112A104MN	Film 0.1 µF			
C2,3	ECKDNS222ME	Ceramic 2200 pF			
C4	ECKD3D221KBN	Ceramic 220 pF			
C5	ECQE2104KF	Film 0.1 µF			
C6	ECQ112A333MN	Film 0.033 µF			
C7-9	ECQE6103KZ	Film 0.01 µF			
C10	YWDEP473K	Film 0.047 µF			
C11	ECQV1H105JZ	Film 1 µF 50V			
C13	YWDEP103K-F	Film 0.01 µF			
C16	YWDTN2G102K	Film 1000 pF			
C17-19	ECEA1EFS471	Electrolytic 470 µF 25V			
C20	EC0S2DG331WL	Electrolytic 330 µF			
C21	ECEA1VGE470	Electrolytic 47 µF 35V			
C22	ECQV1H104JZ	Film 0.1 µF			
T1	YWSVBT12SD	Transformer			
L1	LFEE221R8A5	Line Filter			
L2	HK10S1R037TV	Choke Coil			
F1	YWGH53	Fuse			
E1	YWM110CW5PUL	5-pin Terminal			
E2	YWMC11-5P	Terminal Cover			
E3	YWSB2569A	Fuse Holder			
M42	YWMSVBALCA02	Upper Case			
M43	YWMSVBALCA01	Bottom Case			
			<b>ACCESSORY PARTS/PACKAGING PARTS</b>		
			CN103	YFCNR-1204J	Socket
			CN104	YFCNR-1204P	Socket
			E101	YWPS550C2836	Cable
			M51	YWV8QA3249AN	Operating Instructions
			M52	XZB26X40C05	Polyethylene Bag
			M53	XZB35X50C05	Polyethylene Bag
			M55	YWV9CA2204AN	Packaging Assy
			M56	YWV8FA0140A4	Packaging Label
			M57	YWV8FA0203A4	Packaging Label